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THE BUILDER

A RECORD OF ARCHITECTURE & CONSTRUCTION

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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXIV.—No. 3921. MARCH 29, 1918.

THE PROBLEM OF SMALL HOUSES.

THERE is a general wish evinced on all sides that a new and better start should be made after the war in many matters which affect our national life, and the present is held to be a period when we should determine what changes are desirable. If we are to have an immense number of new cottages built all over the country, it is important to consider how far they are to be planned and designed on old lines, or whether we should not be gainers if we tried new developments by which labour, fuel and service might be greatly minimised. The conditions which have been fixed for the housing competitions recently held would lead us to assume that all architects have to do is to follow on traditional methods, incorporating the improvements which by-laws and regulations have made obligatory, and giving careful attention to the minimum areas which have been laid down as essential to health. And, although the poorer middle classes can expect no help in the shape of grants from the National Exchequer, they also will have to be housed, and many of the difficulties which the planner of cottages has to face have to be met and solved by those who house those immediately above them in the social scale.

The chief defects which make both cottage and small house uncomfortable are those which are connected with the design and distribution of bedrooms, the provision of baths, the supply of hot water, and the appliances for cooking and heating. In a large house the bedroom is frequently a large and pleasant sitting-room amply fired, but in the smaller house and cottage the bedroom is simply a sleeping place and rarely if ever occupied for any other purpose. If we take the hospital, which is the type of building in the design of which hygienic considerations are paramount, we find that cross ventilation is insisted upon and that wards are kept at an even temperature which can be regulated without the use of open fires, and we believe in a very great number of cases these advantages might be easily attained in small houses and cottages. Supposing we assume that our bedrooms were made of a uniform size of 12 ft. × 8 ft., the bed being placed with its head against an outer wall and at the side of a window, and supposing that outside the corridor giving access to it there was a high window or efficient ventilating opening over the door, we should find that in consequence of such cross ventilation the room, though small, was never stuffy. A length of 12 ft. would allow space for an ample clothes cupboard at the foot of the bed, while the latter would be out of a direct draught. It would be necessary to provide more space in the bath room or to provide more than one for each dwelling, so that all washing would be done outside the bedroom. Where a larger room was required for two or more occupants, the partition between two bedrooms could be omitted and the same conditions as to cross ventilation would obtain. It would be necessary to provide for heating, but this could be done either by the adoption of hot-air heating, as in the small American or Canadian house, or by the adoption of hot water pipes, electrical heating, or other means. The space under the bedrooms would be divided presumably into two or three divisions, according to the requirements of the case, either kitchen, scullery and living-room, or otherwise, as desired. The width would be 15 ft. or 16 ft., the length determined by the amount of bedroom accommodation over. We should eliminate fireplaces and chimneys, except the flue needed from the cooking apparatus and that from the heating apparatus if the agency employed were hot water or heated air. The bath room, situated immediately over the kitchen and scullery, would be supplied with hot water from an independent boiler instead of that depending on the kitchen range, from which we often expect two conflicting duties. It would then be possible to adopt many of the admirable stoves made for cooking, which are adaptable with difficulty for hot-water heating, or to rely on gas or electricity. Every part of such a dwelling would be uniformly heated and comfortable in the winter as well as the summer. We have assumed that the site is an open one, but where this is not so some modification of the plan we have sketched out would probably be found to be feasible. We do not say that the suggestions we have outlined indicate the best that can be done in rational housing but we contend that something devised on these or similar methods would be found to save labour and cost and to promote health and comfort, and that if we are to erect an immense number of small dwellings it would be as well to consider whether we should not base our ideas on such lines rather than on the small cottage and house of a past age, which is frequently an inconvenient parody of its bigger neighbours. It is well also to bear in mind that if a house which is really "labour saving" is devised in the future and promotes comfort, there will be a tendency to scrap existing buildings, which will cease to be commercially remunerative.

If we are to have several hundred thousand small houses built within a few years after the war, and if, as we gather from the prevailing trend which marks the political situation of the day, the State is to be a partner in such an undertaking, for which the whole of the taxpayers of the country are to be heavily mulcted, it is of the first importance that we should decide on the best type of dwelling that can be planned, an object which we do not think will be achieved by the competitions which have recently been held. We should think it a far better method if the Government would commission a few architects to design dwellings, on some such lines as we have indicated, to be actually erected at once on vacant sites within easy distance of certain large centres, and then arrange that such houses should be examined by the municipal authorities, and by labour organisations ; and after this a joint report as to the main lines on which future housing should be planned could be drawn up.

When, as in the past, we have depended on private enterprise, it has not been a primary concern of the State whether the property so created was a good or bad investment. The speculator and builder has had to take every chance and every risk, including the utterly unfair and damnatory one of the legislation introduced in the Finance Act of 1909. How unfair an attitude can be taken by those who are generous at other people's expense is shown in a proposal we refer to in our "Notes" column, which we should characterise as an unblushing attempt at robbery thinly disguised by the cloak of philanthropy; but if the State or municipality, to the finance of which we all contribute, is to be the "speculator," enlightened self-interest should surely insist that we should have some regard for the safety of the security created. We neither like, or believe in, the trend of much modern legislation, and are not greatly swayed, or entirely convinced, by Mr. Aldridge's appeal in the name of Christianity, as we believe Christianity is not incompatible with a determination to see that justice is done to all classes and all interests. But, apart from this, we feel great doubts whether the programme which has been launched on the country can be held to be based on sound practicable lines. If we hurry on with great schemes before we are convinced that the units which make up the whole are the right units, we shall be building on sand.

Mr. Davidge made the extraordinary statement that the finance of housing was no concern of architects, as if architects were not citizens of the State and had not special technical knowledge. If we are willing to take up so weak an attitude we cannot be surprised if the public turn to others who can advise them with authority.

NOTES.

The R.I.B.A. London and Home Counties Cottage Competition.

WE shall review the drawings submitted in the competition for cottage designs now on view at the R.I.B.A. in our next issue. As we point out this week, we are very doubtful whether the authorities, and, we may add, the profession, have adopted the right angle of view in dealing with the subject, which is one on which architects should give a lead rather than follow in the wake of the political and social agitation which is filling the corners of our newspapers which are not taken up by war news. The blame for any work done which can be shown in a few years' time to be ill-advised will certainly be placed on our shoulders; whereas, if there is a new and better type which can be devised, architects as a body may as well have the credit of bringing it forward. We do not show our respect for tradition, which was a living force, by being conservative; and it lies with us, if we want to raise architecture to be a living issue, to show that we are more progressive and more resourceful than our critics. As a character in one of W. D. Howells' novels puts it, the skilful architect should know better what a woman wants in a kitchen than she does herself, and knowing it should be able to supply the want.

An Unfortunate Admission.

WE are sorry that any member of the Royal Institute of British Architects should state at any meeting that the finance of housing was no concern of architects, since they are, after all, first, citizens, and secondly, architects, and, as citizens, the finance of housing does matter very much to them. We believe the architect, like the builder, should study the financial aspect of the question, as finance is the rock on which many otherwise excellent projects come to grief. The architect, surely, is in a favourable position for determining, as between two rival schemes, which is the more likely to be feasible and advantageous to the community, and if he fails to grasp the facts he will be considered, *ipso facto*, a less reliable adviser than he might otherwise be considered. For these reasons we believe that architects should give special attention to the various financial schemes affecting building which are from time to time brought to the notice of the public, and that the architect should be in a position to pronounce upon their merits as one in authority.

A Competition.

WE are warned not to believe summer has come because we see a single swallow, and in the same manner we cannot believe that the holding of a competition —unconnected with housing—indicates that the end of the war is at hand. Still the competition, like the swallow, will be welcomed by many as a diversion, and an augury of better times coming. The Trustees of Bolton School and Lord Leverhulme have invited competitive designs for a boys' and girls' school, of which the cost of the first section is to be £50,000, based on pre-war prices, and Mr. John Bradshaw Gass and Mr. Arthur John Hope will act as assessors. Designs are not to be delivered until June 29, and the conditions are well drawn up and clear. There is, as far as we can see, to be a second and final competition, which is, we think, a pity and a mistake. Any competent assessor should be able to select the best design in the first stage, and if he has done so, others who are asked to compete again are merely wasting their time and energies.

The Second Report on Joint Standing Industrial Councils.

WE have before us the Second Report on Joint Industrial Councils issued by the Ministry of Reconstruction. Industries have been divided into three classes: A, those in which the various organizations of employers and employed represent the great majority of those engaged in the industry; C, in which the organization is so imperfect on both sides that no associations can be said to represent those engaged in the industry; and an intermediate class, B, comprising those industries lying between the two first mentioned. The present report deals with groups B and C. With regard to the former, the same methods employed in dealing with industries of group A will be adopted; but with regard to C, it is thought that many modifications of system will be necessary, with a view to building up the organization required. We hope for the best results from Dr. Addison's labours, but it will require the tests of practical experience and time before we can say whether even the magic of Ministerial management will be able to bring into being a new and better industrial world.

A Suggestion from Derby.

MR. W. G. WILKINS makes a suggestion to meet the increased cost of housing after the war, which is, in effect, that as, when the Increase of Rent and Mortgage Interest Act lapses six months after the war, rents of existing property will be largely increased, heavy taxation on such increases should be paid by the house owners to the Government, who should then subsidise new housing schemes in order to bring down their cost, despite the increased cost of building, to something like the pre-war level. At first sight this is a very pleasing proposal for those who own no property, but it should be considered that owners have had no guarantee protecting them against a possible cheapening in the cost of building or materials, and if they had, before building, asked for any such guarantee they would not have had the faintest chance of obtaining it. They took the risks of development and building, and, surely, it is only just that they should take the accruing profits, particularly as they have had to forgo the profits they might have made in war time in the supposed national interests. We believe the only fair way is to allow rents to rise naturally, taking it for granted that wages, which in most cases have already risen, will meet the deficiency. If there has been, and is, a shortage in the provision of housing, surely those who have provided it in the past are justified in taking any extra profit which may accrue to them?

A Point in Arbitration Law.

PERSONS submitting questions to arbitration may not be aware of the principle laid down in the case *In re* King & Duveen (1913, 2 K.B. 32) that where a specific question is submitted to an arbitrator and he answers it, the fact that the answer involves an erroneous decision in point of law does not make the award bad on its face. That was a case where a building owner in Piccadilly, who was erecting new premises, had entered into an agreement with the adjoining owner that if the works should cause any damage to the interior of the adjoining premises the damage should be made good. The flues smoked; and the question was submitted to arbitration which flues smoked, what works should be carried out to prevent them smoking, and, if they continued to smoke after the execution of such works, whether under the agreement the building owner was liable to pay damages. The Arbitrator found that if, after the execution of the works suggested, the flues continued to smoke, there was no right under the agreement to damages. It was sought to set aside the award on the ground that the decision of this latter point was erroneous in law, but the decision of the Court was as we have stated above. It is important to see whether a specific question has been submitted to the Arbitrator, and a recent case, Parsons and Others *v.* Brixham Fishing Smack Insurance Society (*Weekly Notes*, March 9), throws some light on this question. Some trawlers, to escape from enemy submarines, had cut adrift their gear, and the question was whether they were entitled in general average as against the mutual indemnity association. The submission to arbitration left all matters in dispute, and recited "all matters in difference between the parties in reference to the claim for general average contribution" to the arbitrators; and the Court held that it would be unduly extending the decision in King & Duveen if it was held that, notwithstanding that all questions in dispute between the parties were referred, because the submission contained a recital from which it could be gathered what the question of law would be, the parties were to be precluded from questioning the award however erroneous it was in law.

THE ARCHITECTS' BENEVOLENT SOCIETY.

THE annual general meeting of the Architects' Benevolent Society was held on the 21st inst., in the rooms of the Royal Institute of British Architects, No., 9, Conduit-street, W.

The President, Mr. Ernest Newton, A.R.A., occupied the chair, and among those present were Messrs. Henry Lovegrove, William Woodward, Walter Cave, W. Henry White, Lewis Solomon, H. M. Fletcher, Herbert Shepherd, C. H. Brodie, A. T. Bolton, A. Saxon Snell, Wm. Grellier, and G. Scamell.

Mr. Percivall Currey (Hon. Secretary) and Mr. W. Hilton Nash (Hon. Treasurer) were both prevented from being present at the meeting owing to illness.

The Assistant Secretary (Mr. Rudolf Dircks) read the annual report of the Council, as follows :—

"In submitting their sixty-eighth annual report the Council have to report the continuance of activities which have formed part of the work of the Society since the outbreak of the war.

"The scheme of Civic Surveys continues to fulfil the purpose for which it was inaugurated in the three areas, Greater London, South Lancashire, and South Yorkshire, sanctioned by the Government Committee, and has provided temporary employment for a large number of architects. The funds administered by the Society in this connection at the end of the year amounted to £9,700.

"The funds at the disposal of the Architects' War Committee, which are also administered by the Society, having become exhausted towards the end of the year, the President, Mr. Ernest Newton, issued a special appeal on November 26th. This met with a considerable response, and the amount received will enable the Committee to continue its work of subsidised employment and other methods of assistance. The amount already distributed since the formation of the Committee is over £3,000.

"The ordinary relief work of the Society, the assistance of pre-war cases and of the widows and orphans of architects, has followed its normal course, £866 16s. 9d. having been paid in grants and £227 10s. distributed in the payment of pensions. During the year two pensioners have died, and a new pension has been granted to the widow of an architect.

"During the last three years there has been a gradual falling-off in subscriptions and only a small addition to the list of new subscribers. While the Council are aware of the many claims of the present time, they hope that the work of the Society may not suffer from lack of adequate support. The proportion of subscribers to the number of practising architects is small, and the objects of the Society should claim a larger measure of sympathy from the profession at large.

"The amount received in donations was £105 15s., as compared with £313 7s. received in 1916. In addition to the donations, legacies of £50 and £25 were received from the executors of the late Mr. R. Phené Spiers and Mr. Walter L. Spiers. Among the principal donors were: Lady Webb (in memory of the late Philip E. Webb), £10; the Worshipful Company of Salters, £10 10s.; the Tylers' and Bricklayers' Company, £10 10s.; Captain R. Burns Dick, £10 10s.; Mr. H. W. Lonsdale, £6 6s.; Mr. W. Henry White, £5 5s.; Messrs. W. & G. Hunt, £5 5s.; Mr. J. D. Crace, £5 5s.; Mr. H. Beswick, £5; Mr. H. A. Crouch, £5; Mr. D. M. Franklin, £5.

"During the year a claim was made for the rebate of Income Tax for two years, and £276 4s. 9d. was refunded by the Inland Revenue.

"With regard to the capital account, the Society's holding of £800 Exchequer Bonds were converted into National War Bonds, with an additional investment of £200 in order to make the total amount £1,000.

"The Council have to record with great regret the death of two of their most helpful members, Mr. Walter L. Spiers and Mr. Howard Chatfeild Clarke, who were greatly interested in the work of the Society. Following the vacancy caused by the death of Mr. Walter L. Spiers, who was a senior member of the Council, the four remaining senior members retire by rotation—Mr. Percy B. Tubbs, Mr. W. Henry White, Sir John J. Burnet, and Mr. Wm. Woodward. To fill the vacancies caused by these retirements, the Council have the pleasure to nominate Sir Ernest George, Mr. Osborne C. Hills, Mr. H. D. Searles Wood, Mr. Sydney Perks, and Mr. Arthur Crow.

"The Society during the year in its various spheres of activity has worked in useful co-operation with the Professional Classes War Relief Council, the National Relief Fund, the Professional Employment Committee and the Artists' General Benevolent Institution, to whom the thanks of the Council are due. They would further wish to express their thanks to the members of the staff of the Royal Institute of British Architects for their unfailing courtesy in all matters connected with the Society."

The President, in moving the adoption of the report, said :—

"The Society has developed under the auspices of the Institute, although it has been generally supported by all members of the profession, and, as the amount received in subscriptions and the capital account have both grown year by year, it has been possible to relieve much undeserved distress and to help many who have fallen on evil times. A distinguished predecessor of mine once said that he liked the Society because it did its work so quietly. Surely that ought to be one of the principal objects of philanthropic activity. . . .

"The most delicate work of an organisaton such as ours is not the raising of funds—experience has proved that once being assured of the need architects are always ready to give—but in the distribution of the funds. The chief problem which faces all effort such as ours is to discover the right person, the diffident soul in difficulties to whom we may be of some little practical use. The plausible person, of course, abounds, and may, with a little craft, often manage to obtain undeserved assistance. The difficulty is in inducing the right person to go through the formula of making an application and receiving help without feeling a certain loss of self-respect. There is nothing, perhaps, more difficult to a sensitive person, who has often enjoyed a fair measure of success in life, than to show his need in the time of mishap and misfortune. . . .

"My remarks refer, however, largely to the pre-war work of the Society. The war has brought about quite a new set of circumstances outside the ordinary prevision which enables a man to guard against a rainy day. In the usual plan of life such a cataclysm as the present war is beyond our reckoning. At its outbreak the Architects' War Committee anticipated some of the difficulties which architects have since had to meet. And the work of that Committee and its sub-committees has done a great deal towards ameliorating the condition of those who have been most badly hit. The scheme of Civic Surveys, which has been supported by the Government Committee on the Prevention and Relief of Distress, has also worked in the same direction by providing employment in the London, Yorkshire and Lancashire districts. A considerable sum of money has thus been distributed either by the payment of weekly salaries to the workers on the Surveys, or for other forms of subsidised employment, and, in some cases, of grants of money and loans. The administration of these funds has been placed, as you know, in the hands of this Society, which is represented on the various committees. We want that work to go on. Although many architects are at the present time engaged in some form of Government work, there still remains a number of older men who have been unable to find employment. At the end of last November, as Chairman of the Architects' War Committee, I sent a letter of appeal to members of the Institute and others. It met with a liberal response and contributions have been received from places as remote as South Africa, India and Canada. The amount so far received is £830 4s. 2d. Cannot we raise it to £1,000? I hope so. I feel convinced that members of our profession, and there are many to whom the war has brought much work, only require to know our need to respond to it. I appeal to them with every confidence to send a donation at once, so that the £1,000 may be reached before the end of April. I am sorry to notice that the amount received in subscriptions last year shows some falling off. I am sure no Society has a more loyal body of subscribers than ours; but in recent years death has made many gaps and the new subscribers have not replaced those who have gone. The subscription list is not so large that we can afford any diminution of members. I hope those subscribers who are present to-day, as well as those who may read my remarks, will use their influence on behalf of the Society with their brother architects to get them to be subscribers, too. If we can possibly help it we should not let our funds go down at the present time. If we can only arouse a little additional interest on the part of our members in the way I have suggested, I have no doubt that the subscription list will be kept up to the mark. The work of the Society has been greatly assisted by the harmonious relations which exist between it and the Professional Classes War Relief Council, the Artists' General Benevolent Institution and the National Relief Fund, with which bodies it works to some extent in co-operation. . . ."

The report was adopted.

The Council for the session 1918–19 were elected as follows :—*President*: The President R.I.B.A. (Mr. Henry T. Hare). *Vice-President*: Mr. Reginald St. Aubyn Roumieu. *Ordinary Members*: Messrs. Arthur Ashbridge, A. Saxon Snell, Lewis Solomon, J. T. Cackett, William Grellier, Edwin T. Hall, Henry Lovegrove, E. J. Sadgrove, Sir Ernest George, Osborn C. Hills, H. D. Searles Wood, Sydney Perks, George Hubbard, Arthur Crow.

Mr. Wm. Woodward moved a vote of thanks to Mr. W. Hilton Nash for his services as Hon. Treasurer, and his re-election.

The motion was seconded and carried.

Mr. Percival Currey was accorded a vote of thanks for his past services, and was re-elected Hon. Secretary.

On the motion of Mr. Henry Lovegrove, a vote of thanks was accorded to the retiring Auditors, Mr. Osborn C. Hills and Mr. Herbert Shepherd, and Mr. Shepherd and Mr. W. Henry White were elected auditors for the ensuing year.

Mr. Lewis Solomon moved a hearty vote of thanks to Mr. Newton for his services as President of the Society, Mr. W. Henry White seconded, and the motion was unanimously carried.

The meeting then terminated.

THE R.I.B.A. COTTAGE COMPETITION.

The following awards are made in the R.I.B.A. National Housing Cottage Competition in the London area :—

Class A.—1st, Mr. Courtenay N. Crickmer; 2nd, Mr. F. C. W. Barrett; Hon. Mention, Messrs. Wilson, Newton & Round, Mr. C. O. Nelson, Mr. C. Wontner Smith.

Class B.—1st, Mr. Alfred Cox; 2nd, Mr. Courtenay N. Crickmer; Hon. Mention, Messrs. Wilson, Newton & Round, Mr. C. Wontner-Smith, Mr. F. C. W. Barrett, Mr. John C. F. Soutar.

Class C.—1st, Mr. Courtenay N. Crickmer; 2nd, Mr. C. Wontner Smith; Hon. Mention, Mr. Roland Welch, Messrs. Wilson, Newton & Round, Mr. H. R. Gardner.

Class D.—1st, Mr. John A. W. Grant (Edinburgh); 2nd, Mr. W. R. Mosley; Hon. Mention, Mr. C. Wontner Smith.

CORRESPONDENCE.

The Future of British Architecture.

SIR,—I have studied with great interest the very striking letter from Mr. John Murray, which appeared in your issue of March 1, and find that it contains not merely the germ of an excellent and much-needed movement, but that it sets out a great variety of valuable suggestions which should usefully form a basis for such a conference as is suggested by Sir Aston Webb in your issue of March 8, and supported by Mr. John Slater in your issue of March 15.

Mr. Murray has succeeded in putting into shape various thoughts which must, from time to time, have occurred to many of us, and it would be for such a conference as is proposed to ascertain how far these ideas can be brought into practical form.

There can be nothing but a cordial welcome for the opportunity of considering such a programme, which should help to consolidate the profession and to secure its future prosperity; and there must be many who, like myself, are waiting expectantly for the formation of the suggested committee, comprising those both within and without the Institute.

DELISSA JOSEPH.

SIR,—Forty years ago a number of my letters appeared in the *Builder*, urging the R.I.B.A. to obtain powers for making the profession a closed one, as I foresaw that if nothing were done, architectural work would be captured by unprofessional men. In later years people did not seem to be aware of the existence of architects, for if they wished to have a house built for their own occupation they went to auctioneers for the drawings.

For the sake of the many gallant young architects at present serving their country abroad, it is greatly to be desired that Sir Aston Webb may be successful in his efforts to secure their future prosperity.

FREDK. NESBITT KEMP.

SIR,—Mr. John Murray's letter in the *Builder* of March 1 is indeed, I think, fitly described by Sir Aston Webb as a "weighty letter." As a non-member of the Institute, and although having practically retired some years since, after thirty years' practice, I have always felt that the Institute might by combined effort have placed the architectural profession in a much stronger position.

Have the public taken architects as a body to be good all-round advisers? Have they taken us seriously?

Your leading article, Mr. Editor, in last week's journal would indicate that America also has not seen fit to make use of her architects at this time for work for which we might have thought they would have been considered fully fitted. There is indeed no time to be lost. If something is to be done, it should be done now at once.

J. KINGWELL COLE.

Loughton, Essex.

SIR,—The *Builder* of March 1 contains an admirable *résumé* of the future of British architecture from Mr. John Murray, and Sir Aston Webb, in your issue for the 8th, refers to Mr. Murray's letter, and makes a suggestion that the Institute Council should, without delay, appoint a strong committee to consider the whole relation of architecture to architects. This is a comprehensive suggestion, and would meet, no doubt, Mr. Murray's views and the views of every member of the profession.

Mr. Murray's letter takes my mind back to many years ago, when I indulged in a lively correspondence, in the columns of *The Times*, with the late Mr. Norman Shaw and Sir Thomas Jackson, who we are happy to know is still with us. The subject of the correspondence was "Architecture a Profession or an Art," and Mr. Murray's letter really embraces that title. The consensus of opinion on that subject was that "architecture was both a profession and an art."

With about half a century's knocking about in bricks and mortar I am convinced that Mr. Murray is right in his conclusions that the practice of an architect should include all that the public demands for the healthy and artistic completion of their buildings in every detail. I am satisfied that the architect should include within his domain not only the enthusiastic love of his art, but the attainment of every item involved in the perfect building, together with sufficient knowledge to enable him to protect the pockets of his clients, including acquaintance with the rules and regulations of controlling authorities, and not forgetting to protect his employers as far as possible from actions at law as regards rights of light and other easements.

I remember that some years ago a man who termed himself a "surveyor" as well as an "architect" was looked at askance by certain members of the profession, who appeared to think that when they had designed, and skilfully drawn, some carved brick, stone, and woodwork they had earned their 5 per cent, and that sanitary, constructional, and other work in the building might well be left to experts in those branches.

I am happy to say, however, that that day has gone by, and from my knowledge of recent Presidents of the R.I.B.A. I am convinced that they are keenly alive to the interests and pockets of their clients as well as to the higher branches of their profession, and this quite as much as any of the practitioners who headed their notepaper with the words "architect and surveyor."

All the points brought forward in Mr. Murray's letter would, however, be properly dealt with by the committee suggested by Sir Aston Webb, which I hope will be appointed at an early date so as to obtain the experience of many of us who are not likely, for a long period, to continue in our sublunary abode.

WM. WOODWARD.

13, Southampton-street, Strand.

SIR,—The letter published in your issue of March 1 by Mr. John Murray, F.R.I.B.A., as a comment on your own leading article of January 25, presents, as the writer has said, "a vista full of possibilities for the future good of architecture and architects." He has also pertinently referred to the R.I.B.A. Charter, 1834, which lays down the principle "that architecture embraces the whole circle of the sciences." Upon this he has evidently based his plea for an "open door," for the admission of other professions, whose interests are bound up with ours, for a closer co-operation and community of action.

A careful reading of that letter in conjunction with the article mentioned opens up still further possibilities in the direction of economy of effort and of finance. But the initial difficulty remains, the ingrained habit of human nature to resent interference from the outside with what are considered their respective spheres of influence and practice.

It seems to me, however, that a way is to be found to compass the situation, which would not only benefit the study and practice of our profession but would bring into a more sympathetic union men of culture and penetration to their mutual benefit. Moreover, in looking around, we see that organisations exist which only require co-ordination to bring them into potential relationship. I submit, therefore, the following as a suggestion which seems worthy of consideration in view of movements already evident throughout the world of men and matters.

As the establishment of Chambers of Commerce has brought together men with interests in common, although their business is various, so the formation of a similar body comprising such kindred professions as appertain to architecture and engineering could be organised. This, whilst not interfering with the status or consideration of the allied bodies, would help to establish them more securely both as regards themselves and in the estimation of the public.

The advantages accruing through such a "sympathetic union of the relative sciences" are obvious. It would benefit individual members, giving them wider scope in the study of an art which has few subjects beyond its ken, by contact with expert opinion on cognate questions. It would enlarge our knowledge to the advantage of construction and design, evolving possibly new ideas and modifying older methods for the economic and financial benefit of all. These things would be brought to our very doors, so to speak, for by the freemasonry of united professions access would be had which is often debarred to the man who ploughs his lonely furrow. It would benefit the education of those destined for the architectural or kindred professions in providing a broader, more consistent curriculum, as a guide and preparation for examination tests and future practice.

The inception of such a scheme presupposes the establishment of convenient "centres," as well as a Metropolitan Chamber with which local members and the several societies would be in direct touch. Its organisation would be supported by subscription; and the establishment of these co-ordinating "centres" with the London Chamber could be partly met by the funds of those bodies which would benefit under such an association. Technical libraries and bureaux of information would, of course, be important adjuncts. As to the latter, each local branch could be kept up to date in all questions of practice and matters of common or special interest, in which the London office would act as a clearing house, so that each branch would have exactly the same matters of reference at its immediate disposal.

Such an organisation as outlined would also be of great service from a national point of view, for it would be thoroughly equipped to deal with the various Government Commissions and Inquiries which may be set afoot from time to time, and in which expert opinion and first-hand knowledge is essential. There are many other questions involved, helpful to the specialist as well as the ordinary practitioner, but these few points which I have touched upon suffice to show the possibilities of my suggestions.

GEORGE COWAN, A.R.I.B.A.

Finance of Housing.

SIR,—I respectfully submit for your consideration a contrast between the proposals of the Government as to housing and those of my pamphlet, a copy of which I sent to you in January.

The Government propose that the loss on the housing shall be apportioned 75 per cent. to the Exchequer and 25 per cent. to the Local Authorities, the loss thereby falling on the already overburdened taxpayer and ratepayer.

I suggested the imposition of House Duty on houses under £20 a year, chargeable to the owner, rechargeable to the tenant, and the extra rent, about one penny per week, provided for in readjustment of wages which *must* come after the war; so that there would be no loss to the Exchequer, to the Local Authorities, no burden on taxpayer or ratepayer; and the whole finance would be effected by a slight increase of rent balanced by a slight adjustment of wages: an equitable and economic solution of the problem.

The Government proposal, by promising 75 per cent. to the Local Authorities, and not even suggesting the same to private enterprise, practically gives the death blow to the latter, as it cannot, under such a handicap, compete with the Local Authorities. According to the Land Inquiry Report, 1912–13, private enterprise has in the past supplied 99 per cent. of the housing. This will have to be done in the future entirely by the Local Authorities, with very serious burden on the taxes and rates, and may have in the future to be borne entirely by the rates.

EDWD. M. GIBBS.

[*** Mr. Gibbs has sent the above letter to various papers to which he has sent copies of his pamphlet on the Finance of Housing.—ED.]

GENERAL NEWS.

Public Appointment.

The London County Council has appointed Mr. Lawton R. Ford, District Surveyor for the district of St. James, Westminster, as on and from the 21st inst., to be Interim District Surveyor for the district of St. Marylebone, his office being No. 60, Haymarket, S.W. 1. Tel. No. Gerrard 4553.

The London County Council.

At last week's meeting of the London County Council, at Spring Gardens, S.W., Mr. R. C. Norman was elected chairman for the ensuing year, Mr. Cecil U. Fisher, brother of Mr. Hayes Fisher, President of the Local Government Board, was appointed vice-chairman, and Miss Wallas deputy chairman.

"Nothing Gained by Overcrowding."

A third edition of "Nothing Gained by Overcrowding," by Mr. Raymond Unwin, F.R.I.B.A., is issued by the Garden Cities and Town Planning Association. In the new edition Mr. Unwin has revised the text, and added new illustrations to bring home his points. There are eight diagrams and an equal number of illustrations, giving useful contrasts of methods of development. Of special interest is the Foreword by the Marquis of Salisbury, the President of the Association. Copies may be obtained from the Garden Cities and Town Planning Association.

The National Association of Master Heating and Domestic Engineers.

At the 14th annual general meeting of this Association, held in the Holborn Restaurant, London, on March 19, Mr. Ernest Griffiths, M.I.Mech.E., of Messrs. Dargue Griffiths & Co., Ltd., Liverpool, the retiring President, delivered an address on the work of the Association which had greatly increased during the past year. Mr. Frank Biggin, of The Brightside Foundry and Engineering Co., Ltd., Sheffield, was elected President for the coming year, and explained the programme in hand for the immediate future, which included the setting up of a Joint Industrial Council for the heating and domestic engineering trade.

Timber Hauling on the Roads.

Compensation for extraordinary damage to public roads caused by timber haulage for national purposes is, it is stated, to be dealt with by the Controller of Roads and Bridges, Lands Directorate, War Office, in communication with the Road Board. The Army Council has appointed Road Control Officers, who will give instructions controlling timber traffic on public roads. Their duties will be carried out in the closest co-operation with the highway authorities concerned in order to assist in reduction of avoidable damage to roads. The Road Control Officers will in no way interfere with the statutory duties or responsibilities of any highway authority.

State Housing Programme.

Mr. Hayes Fisher, replying to a deputation from the London Labour Party, said that to build good houses after the war at anything like a rent which the working classes could afford must largely depend on the price of money, and therefore it would be useless for the Government to prepare plans on too large a scale. The figure that he and Dr. Addison had in mind was that it might be possible to build 300,000 houses within twelve months of the end of the war. He had seen it stated that there was a possibility of building a million houses. It really was not possible. With reference to a suggested conference of all local authorities, Mr. Hayes Fisher said that he was awaiting a report on a comprehensive survey which the London County Council told him they were going to make, and in due course he would take care that the suggestion should be brought before the Council.

THE COMMITTEE ON WAR DAMAGE.

On the 15th inst. a meeting of the Committee on War Damage was held in the Newcastle Town Hall. The members were welcomed by Sir George Lunn, the Lord Mayor, who, in an opening address, spoke very strongly in support of the objects of the Committee. The Lord Mayor of York, President of the Committee, then took the chair and submitted a report from the Executive Committee. Mr. Mark H. Judge, chairman of the Committee, proposed, and Baillie Wallace Dunlop, on behalf of the Lord Provost of Edinburgh, seconded the resolution:—

"That the Report of the Executive Committee, with its concise record of work done since the formation of the Committee in October, 1915, be, and is hereby, adopted as satisfactory; that this meeting, representing Chambers of Commerce, City Livery Companies, Building Societies and 842 Municipal Authorities, having a population exceeding 32 millions, reaffirms the Resolution passed at the meeting when the Committee was formed, viz.:—'That the Government Scheme for insuring against loss or damage by aircraft or bombardment for war damage inflicted by the enemy, is manifestly unjust, and that the Government should revert to the policy adopted in connection with the raids on the East Coast prior to the introduction of the Insurance Scheme, and compensate sufferers out of national funds'; further, that we reaffirm the Resolution passed at the last meeting of the Committee at the City of London Mansion House with regard to the concession made in reference to our Memorial, viz.:—'That while we welcome the new scheme in so far as it provides from national funds compensation for war damage to property up to £500, we are greatly disappointed at this insufficient outcome from the Prime Minister's reply to the Committee on July 13th last, especially as all sufferers, prior to September, 1917, and all sufferers in person, have been entirely left out of account. In our opinion the scheme is so unsatisfactory as to call for immediate reconsideration by the Government, and we hereby ask the Prime Minister to grant our deputation another interview with as little delay as may be'; and this Committee feel they are justified in calling upon the Government to give full effect to the statement made to us by the Prime Minister in July last, viz.:—'The French Government have given a general pledge that the devastated areas will be restored. Well, the devastation there is on a more wholesale and a more terrible scale, and the losses inflicted are terrible; and the burden of the French Government will be all the greater. But whether great or small, the principle is exactly the same. We must protect our people, in so far as we can, against the consequences of these barbarities, and we ought to do so without distinction of rich or poor.'"

This was supported by representatives from the following municipalities:—Tynemouth, Glasgow, Folkestone, Blackpool, Whitby, Ayr, Gosforth, Lowestoft, East and West Flegg, Auckland, Dover and Sunderland and passed.

Deputy Sir Robert H Rogers, London, proposed, and Councillor William Davidson, of the Corporation of Glasgow, seconded the following resolution, which was passed unanimously:—

"That this meeting especially desires to place on record its cordial approval of the last paragraph of the Report of the Executive Committee, viz.:—'Great as has been the destruction in France, the Government of the French Republic accept the principle of national responsibility and give effect to it. France protects her people without distinction of rich or poor. How different the scheme this country is asked to accept. The War Cabinet makes distinctions of all kinds. To begin with, they fix a limit of £500, beyond which there is to be no compensation. Then national responsibility is only to begin as from September last. Just picture to ourselves the reparation in Belgium and France limited to the damage done since August last! All injuries prior to September British sufferers are to bear as best they may.'"

CHADWICK PUBLIC LECTURES:

ELECTRICITY AND NATIONAL PROGRESS.

A LECTURE, entitled: "Electricity and the Work of the Nation," being the first of a course of three, dealing with electricity applied to the national future, was delivered at the Albert Hall, Swansea, on March 8, by Professor H. T. Davidge, the Mayor (Alderman B. Jones, J.P.) being in the chair.

The lecturer began by reminding the audience of the life and work of Chadwick (1800-1890) and explained the origins and aims of the Chadwick Trust, especially as applied to the organisation of lectures of a popular but practical character dealing with the essentials for the physical well-being of the community. He then pointed out that since all the necessaries of life have to be won from nature by labour intelligently directed, in order to obtain the greatest possible results from our efforts, every natural resource must be utilised to the utmost and in the best possible way. At present this is not being done efficiently, and the aim of the lecture was to show how improvident we are and to indicate the direction of improvement.

The various sources of power were then reviewed, such as streams, tides, winds, solar heat, oil and coal, the first and last being for Wales the only two of practical importance.

Since work must be done cheaply everywhere, while it is very convenient to produce power from water and coal in special areas, the transmission of power to a distance is of vital importance, and electricity furnishes the best solution. By its aid very great power can be sent very many miles, with only slight loss, over quite thin copper wires, provided high voltages be employed. The lecturer then explained the relation between heat and work, and between available water supply and work, and contrasted the waste at present permitted with the efficiency to be aimed at in the future.

Typical sketches were given of Welsh villages in which water power respectively was and was not usefully employed. The most efficient machines for obtaining work from water and from coal were explained and their vast possibilities enlarged upon.

Figures were given as to the available water power and coal supply of Wales, and in the latter case the necessity for large power stations, near both coal and condensing water, equipped with large turbines, was emphasised.

The question of the direct burning of coal under the boilers or the previous production of gas was then dealt with, and the importance of the by-products of coal was pointed out.

The health-giving advantages of a town were then dilated upon, in which all the factories and furnaces would be electrically supplied, all houses electrically lighted and heated, and all traction electric. Schemes now under consideration to this end were discussed.

The lecturer concluded by expressing a hope that in the future, instead of being outstripped by foreign small towns and villages in the use of water power, Wales, at any rate, would in turn take the lead. Slides were shown illustrating smoke and fume reduction, coal resources, work from heat, water turbines, steam turbines, power stations and high tension distribution.

The Industrial Reconstruction Council.

The Industrial Reconstruction Council is holding the second of its series of important provincial meetings at the Assembly Hall, Edinburgh, on April 3. The Lord Provost will preside, and Dr. Addison, Minister of Reconstruction, will be the principal speaker. The object of the movement is to arouse a widespread interest in the recommendations of the Whitley Committee for the establishment of a Joint Council in every industry. Applications for tickets should be made to the Secretary, The Industrial Reconstruction Council, 8, Bouverie-street, E.C. 4.

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ILLUSTRATIONS.

OUR illustrations this week include views of the Innholders' Hall. An article on the Company appears on page 201.

Two Old Aberdeen Chairs.

We illustrate two of the chairs connected with the old trade guilds of Aberdeen which have been preserved, and which belong to the Bakers' and Fleshers' (or Butchers') Guilds. About eight of the chairs, which were used by the Deacons of the various Incorporated Trades of Aberdeen, have been preserved, and are interesting examples of an age in which furniture was largely the work of the carpenter, or wright, as he was termed north of the Tweed. It is worthy of note that of the "masterpieces" required from those who wished to join the various companies, that prescribed for the Wrights was by far the most severe test, and would have exercised the skill of an expert cabinet-maker of to-day.

Cottages, Dollis Hill Estate.

We illustrate a well-designed group of cottages recently erected from designs of Mr. G. H. Paine, architect.

LAW REPORTS.

Chancery Division.

(Before MR. JUSTICE NEVILLE.)

Property Owner and Housing Committee's Condemnation.

Broadbent v. Rotherham Corporation.

This matter came on as a motion for a writ for sequestration by Miss Alice Hannah Broadbent against the Mayor and Corporation of Rotherham on the ground that it was alleged that the Corporation had disobeyed an order of Mr. Justice Astbury that they should not enforce orders for the demolition of Miss Broadbent's houses in Psalter's-lane and Pottery-lane without hearing and determining according to law, plaintiff's application for postponement orders.

On behalf of the Corporation it was argued that the matter had, as a matter of fact, been heard and determined, and the Housing Committee had come to the conclusion that it was impossible the houses should be rendered fit for human habitation.

For the plaintiff it was contended that if the Corporation had not looked at her schedules they had not determined the question according to law, and that the hearing of criticisms should not have been in her absence.

Mr. Jenkins, K.C., for the plaintiff, said he did not know how he should conduct a successful appeal in the Courts if he had to appeal and (alluding to the committee's meeting) did not know what the judge had in his mind against him.

His Lordship enquired whether this was not a case where it was sought to make the plaintiff judge as well.

Mr. Justice Neville, giving judgment, said the only question was whether the Corporation had heard and determined this matter according to law, and that question was determined when they had determined what "according to law" meant. He thought it meant according to law as laid down by the learned judge in delivering judgment when he made the order in the previous hearing, to which the plaintiff had referred. Mr. Justice Astbury said there was an application by the owner for decision by the local authority and application by the owner to execute the necessary work. The local authority, he further said, were not entitled to refuse to consider the owner's plans and specifications because in their opinion the premises could not be made fit for habitation. To decide without seeing them would not be a proper exercise of discretion. He (Mr. Justice Neville) found from the evidence that the plans and specifications were considered. A sub-committee was appointed to go into this question and to visit the site. It considered the question adequately and decided that the proposed alterations and amendments in the plans would not have rendered the houses fit for human habitation. Having done so, it appeared to his Lordship that they had fulfilled the obligation upon them under the order of hearing and determining, according to law, the plaintiff's application. He thought that having an order of the Court, they turned to the judge's judgment to see what the order meant, and, having done so, they could not be held to have committed a breach of the order. The motion failed and would be dismissed with costs.

Official Referee's Court, March 18.

(Before MR. P. VEREY.)

Action by Builders.

Pitcher v. Salmon.

In this case Pitcher & Co., Ltd., sought to recover £83 13s. balance of an account of £233 for work done. The plaintiffs are a private limited liability company of builders and contractors, and the defendant was a Miss Helena Amy Salmon, a lady who was said by plaintiffs' Counsel to have been engaged in a good deal of litigation.

From Counsel's statement it appeared that the work in respect of which the claim was made was the pulling down and rebuilding a wall at the Ocean Mill, White Horse-lane, Stepney, in August or September, 1916. The plaintiffs, who were introduced to the defendant by her own solicitors, were brought in because the wall, which was the property of the defendant, had been condemned by the local authorities as a dangerous structure. In the middle of September Mr. Pitcher, who was managing director of the company, saw defendant and inspected the wall, after which the contract was made for the work of repair and rebuilding.

The Official Referee said that, as the greater part of the money had been paid, he did not suppose the contract was disputed.

Counsel said that that was so, but plaintiffs had done extra work. They put in a 6 ft. foundation instead of 3 ft., as originally intended.

The defendant disputed the necessity for this and alleged against the plaintiffs that they had made use of certain timber joists which were her property. She also complained that the work was not properly finished, particularly the cement facing, which was uneven.

Mr. Frampton, architect and surveyor, of 4, King's Bench-walk, called in support of defendant's case, confirmed her statement as to the cement facing, but said that the wall itself being an old one was in itself uneven.

The defendant, who conducted her case in person, subjected the plaintiffs' witnesses to a vigorous cross-examination.

The Referee, in the result, however, said that the case was a very clear one, the plaintiffs having done the work according to their estimate, and the extra work charged for had been ordered by the District Surveyor. The evidence satisfied him that the work had been carried out in a workmanlike manner, and he ordered judgment to be entered for the plaintiffs for £83 13s., with costs.

Book Received.

MATHEMATICS FOR ENGINEERS. By W. N. Rose, B.Sc.Eng. (Lond.). (London: Chapman & Hall, Ltd. 8s. 6d. net.)

NEW GOVERNMENT CONTRACTS.

War Office.

Apparatus (*Water*).—H. J. Cash & Co., Ltd., London, S.W.; Keith & Blackman, London, N.

Bath Installations.—H. Braithwaite & Co., Ltd., Leeds.

Benches (*Saw*).—A. Ransome & Co., Ltd., Newark; T. Robinson & Son, Rochdale; Wadkin & Co., Leicester.

Boilers (*Portable*).—Callendar Iron Co., Falkirk; Carron Co., London, E.C.; Dobbie, Forbes & Co., Ltd., Larbert; Falkirk Iron Co., Ltd., Falkirk; Forth, Clyde and Sunnyside Iron Cos., Ltd., Falkirk; Jones & Campbell, Larbert; R. & A. Main, Ltd., Falkirk; Newton, Chambers & Co., Ltd., Sheffield; S. Smith & Sons, Ltd., Smethwick; Smith & Wellstood, Ltd., London, E.C.; Watson, Gow & Co., Ltd., Falkirk; G. Wright, Ltd., London, E.C.

Bolts and Nuts, &c.—Bayliss, Jones & Bayliss, Ltd., Wolverhampton; Bullers, Ltd., Tipton; C. Cooper & Sons, Ltd., Sheffield; Horton & Sons, Ltd., Darlaston; Ibbotson Bros. & Co., Ltd., Sheffield; T. Mayer & Co., Ltd., Darlaston; W. Miller & Sons, Wolverhampton; J. C. Prestwich, Ltd., Atherton; C. Richards & Sons, Ltd., Darlaston; Stones Bros., Ltd., West Bromwich; Swain, Verney & Co., Ltd., Birmingham; Walker & Wilson, Hamilton, N.B.; Wilkes, Ltd., Darlaston; J. Wiley & Sons, Ltd., Darlaston.

Bricks and Fireclay.—Smead, Dean & Co., Ltd., Sittingbourne.

Bridges (*Portable and Parts*).—Kryn & Lahy Metal Works, Ltd., Letchworth.

Culverts (*Cast-iron*).—Mechans, Ltd., Glasgow.

Felt (*Roofing*).—D. Anderson & Son, Ltd., Belfast and London E.; R. W. Blackwell & Co., Ltd., Croydon; Briggs & Sons, Ltd., Dundee; G. M. Callender & Co., Ltd., London, E.; Graves & Co., Ltd., Waterford; F. McNeill & Co., Ltd., London, E., and Kirkintilloch; Northern Counties Ashphalte Co., Belfast; Permanite, Ltd., London, E.; Ruberoid Co., Ltd., Brimsdown, Middlesex; Tunstall & Co., Ltd., Leeds; Vulcanite, Ltd., Belfast.

Gear (*Door*).—O'Brien, Thomas & Co. London E.C.

Joinery.—Pickles & Son, Hebden Bridge.

Lamps (*Brazing*).—T. E. Bladon & Son., Ltd., Birmingham.

Lavatories, Sinks and Fittings, &c.—B. Finch & Co., Ltd., London, S.E.; G. Howson & Sons, Ltd., Hanley; Johnson Fireclay Co., Ltd., Stoke-on-Trent; Johnson Bros. (Hanley), Ltd., Stoke-on-Trent; J. Jones (Chelsea), Ltd., London, S.W.

Mixers (*Concrete*).—F. Parker, Leicester; Ransome-ver Mehr Machinery Co., Ltd., London, S.W.; Stothert & Pitt, Bath.

Ovens (*Draw-plate*).—Perkins Engineers, Ltd., St. Albans.

Paint.—Burrell & Co., Ltd., London, E.; Cornbrook Chemical Co., Ltd., Stockport; H. W. Cox & Co., Ltd., London, S.W.; Davis Bros., Ltd., London, E.; Dixon's White, Ltd., London, E.; Goodlass, Wall & Co., Ltd., Liverpool; Horne's Luminous, North Cheam, Surrey; O. Wilkins & Co., Ltd., Derby.

Piping and Fittings (*Metal*).—Climax Ventilating and Heating Co., Ltd., Glasgow; S. Groves, Soho, Birmingham; Hugh Bros., London, E.C.; H. C. Jones & Sons, London, E.; Mather & Platt, Ltd., Manchester; F. W. Potter & Co., London, E.; J. Russell & Co., Ltd., Walsall; J. Russell & Sons, Ltd., Wednesbury; J. Spencer, Ltd., Wednesbury; Stewarts & Lloyds, Ltd., Coatbridge; Stirlingshire Iron Co., Ltd., Bonnybridge, N.B.; W. Williams & Sons, Glasgow; Wilson Bros., Glasgow; Windsor Sheet Metal Works, Glasgow; G. Wright, Ltd., Rotherham and London, E.C.

Plant (*Boring and Welding*).—Imperial Light, Ltd., London, S.W.; C. Isler & Co., Ltd., London, S.E.

Pumps.—Beck & Co., Ltd., London, S.E.; S. Briggs & Co., Ltd., Burton-on-Trent; Deane & Beal, Ltd., London, S.E.; Farringdon Works and H. Pontifex & Sons, Birmingham; Hattersley & Davidson, Ltd., Sheffield; S. Jones & Co., London, S.E.; J. Stone & Co., Ltd., London, S.E.

. The . .

City Companies and Their Halls.*

No. 29.

The Innholders' Company.

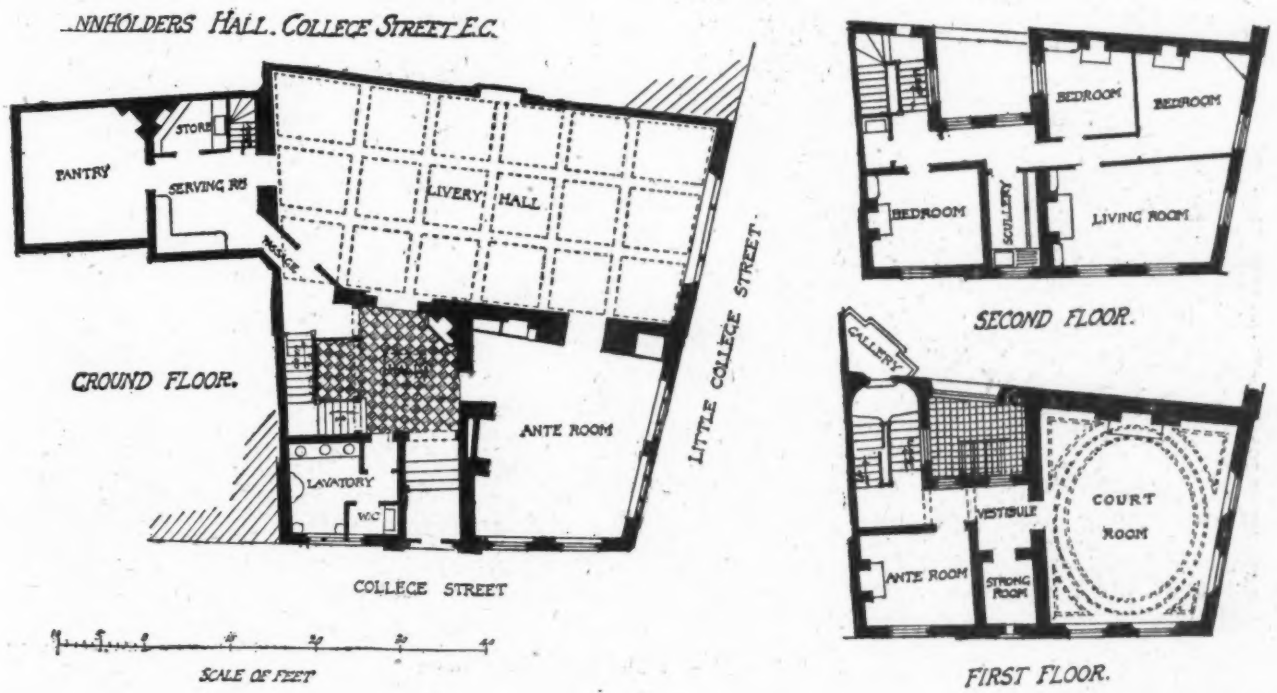
THE INNHOLDERS

THE Innholders trace their origin back to an earlier time when those who filled somewhat similar functions were termed Hostelers and Harbergeours. In 1327 the Hostelers and Harbergeours petitioned that the practice of stowing away hay in houses and retailing it at the excessive price of ½d. a bottle, should be stopped; and in the City ordinances of 1365 it was enacted that "No hosteler or harberger shall make bread for his guests in his house, but shall buy of common bakers," and all hostelers and harbergeours who had houses in the City of London and its suburbs were to sell hay and oats at reasonable prices, defined as being not more than 2d. for a horse for a day and night, and the hay sold in "botels" was to be charged for in proportion. The keepers of ale houses, wine taverns and victuallers do not appear in early times to have lodged their guests, a duty which fell to the Hostelers. In Newcastle-upon-Tyne the Hostmen were originally those burgesses who entertained foreign merchants on their visits to the town, and old statutes enacted that in every town to which merchant strangers repaired hosts should be assigned to them by the town authorities, and they should dwell with those hosts. The Hostmen of Newcastle developed into a body which obtained the privilege of disposing of sea-coal, pit coal, grindstones, whetstones and rubstones in Newcastle, but in London what was probably originally a body filling somewhat similar functions developed into the "innholders" during the course of the fifteenth century.

The "men of the mistery of Hostellers," in 1446, appealed to the mayor and aldermen, praying them to confirm certain ordinances, among them "That the Wardens have power to search all Hostelries and inform the Mayor Chamberlain of such guests and people as they find not of good name and fame." In 1473, they further petitioned that they had been improperly described as Hostelers, a term which applied only to their servants, and they begged that all of the craft being freemen and keeping inns within the City and its suburbs should henceforth be termed *Innholders*, which request was granted. A further petition presented in 1483 asked that no person should lodge guests or horses in petty or little *Ostryes*, but that all such guests should be lodged in open *Inns*, having signs hanging in lanes, streets and open places.

In 1509 the Innholders applied for a charter, which was granted to the Master and three Wardens of the art and mistery of St. Julian le Harberger in 1514. The saint was said by tradition to have turned his dwelling into a lodging house or hospital for the sick and wounded, thus appropriately being taken for the patron of a body which dispensed hospitality. A second charter was given to the Innholders by Charles II in 1663, which confirmed the Innholders' privileges and gave them jurisdiction in the City and three miles round it. This charter was surrendered, like others, in the reign of James II, who incorporated them afresh, but the former charter was restored in the following reign. In 1758 the privileges granted in the charter of Charles II were questioned as far as they applied to an area

**** The following articles on the City Companies have already appeared in our pages:—the Mercers', March 31, 1916; the Grocers', April 28; the Drapers', May 12; the Goldsmiths', June 9; the Skinners', July 14; the Merchant Taylors', August 4; the Haberdashers', September 1; the Salters', October 6; the Ironmongers', October 27; the Vintners', December 8; the Clothworkers', December 22; the Barbers', January 26, 1917; the Dyers', Feb. 16; the Brewers', February 23; the Leathersellers', March 30; the Pewterers', April 20; the Cutlers', June 1; the Bakers', June 15; the Wax Chandlers', June 29; the Tallow Chandlers', August 10; the Butchers', September 7; the Armourers' and Brasiers', September 21; the Girdlers', October 12; the Saddlers', November 9; the Apothecaries', December 7; the Painter Stainers', January 11, 1918; the Curriers' on February 15; the Founders' will be given in April; and the Fishmongers' at a later date.



outside the City, as it was held that the king could not, without the foundation of some custom, restrain the common law right of any subject to exercise any trade or compel anyone to be free of the Company, and it was therefore held that the powers granted the Innholders could only be exercised in the City of London.

Arms were granted in 1634 by Sir Richard St. George Clarencieux, and are thus described:—

Azure a chevron argent between three oatsheaves or on a chief argent, a St. Julian's cross sable, and for mere crest a starr or appearing out of a cloude proper, supported with two horses regardant argent motto (former) Come ye blessed when I was harbourless ye lodged me; (present) Hinc spes affulget.

Although Chaucer mentions the "Tabard" inn, in Southwark, in the "Canterbury Tales," it is doubtful to what extent the keepers of houses of entertainment in former times furnished their guests with both food, drink and accommodation, which, in earlier times, were supplied to travellers in monasteries. It may very well be that the protagonist of the innkeeper followed the custom formerly almost universal in the country districts of Spain and in the East, where travellers were provided with accommodation for sleeping and depended on themselves for provisioning. But the inns of England in later years provided hospitable entertainment for rich and poor, and in many cases have become historic traditions connected with our towns and great coaching roads, while the smaller country inns for years took the place of village clubs and centres of social intercourse.

Of the Hall which stood on the present site before the Great Fire no record has been left, but in 1667 a draft of a new hall was ordered, the site cleared, and a building erected at an approximate cost of £1,200. Mr. Douglass Mathews has approximately verified the amounts paid to tradesmen at the time of erection, which were as follows:—

Bricklayer and Tyler ..	£500	0	0
Carpenter	344	0	0
Joiner	164	0	0
Slater per yard	4	0	0
Plumber	43	0	0
Mason	31	0	0
Smith	28	12	0
Plasterers	66	8	0
Glazier	10	0	0
Painter	11	10	0
	£1,292	10	0

Of the money required, £220 was raised by subscription, and the remainder by the issue of bonds.

There is no record of any architect being employed. Like other of the smaller work of the time, the building probably owed its character to the skill and fancy of the master craftsmen employed. In 1784 the Hall was thought to be in a dangerous condition, and a surveyor was sent for. As he was out, a bricklayer was consulted and paid a fee of half a guinea for assuring the Company that all was as it should be.

In 1842, Tite (afterwards Sir William Tite) carried out work, costing £700, in connection with the Hall, and in 1892 it was found that a large scheme of reconstruction was necessary, owing to the dilapidated condition of the structure. Though it was found necessary to rebuild most of the structure it has been so well and carefully carried out that little has been altered, and the essential charm of the original design has been retained. Thus the Hall and ante-room now forming the reception room, which was formerly the court room, remain much as before, except that the width of the reception room is increased by the removal of a large chimney stack. The ceiling of this room contains the arms of the king, the City, and the Innholders' Company, together with the date 1670. This ceiling and the panelling are parts of the original design carefully restored, as are also the panelling and fittings of the adjoining Livery Hall. The staircase and court room over are new, but the quaint entrance door has been carefully preserved, and forms a most interesting example of the traditional detail of the time, its large brick opening forming a framework for the rich and florid design of the doorway itself. The planning of the remainder of the building is skilful, and the Company are fortunate in having been ably advised.

The Innholders administer various trusts committed to their care by former members for the relief of the poor members of the Company and the poor of St. Laurence Jewry under bequests of various dates, one of which, Thomas Bayley's Gift, dates back to the reign of Henry VIII, as well as participating, as far as their funds permit, in other good works.

The present holders of office of the Company are as follows:—*The Master*, John; Robert Cooper, Esq., H.M.L., J.P., D.L., ex-Sheriff of London; *The Upper Warden*, Thos. W. Hall; *Middle Warden*, Douglass Mathews, H.M.L., C.C.; *Renter Warden*, Walter Daniel Cronin; *Clerk*, Francis Druce.

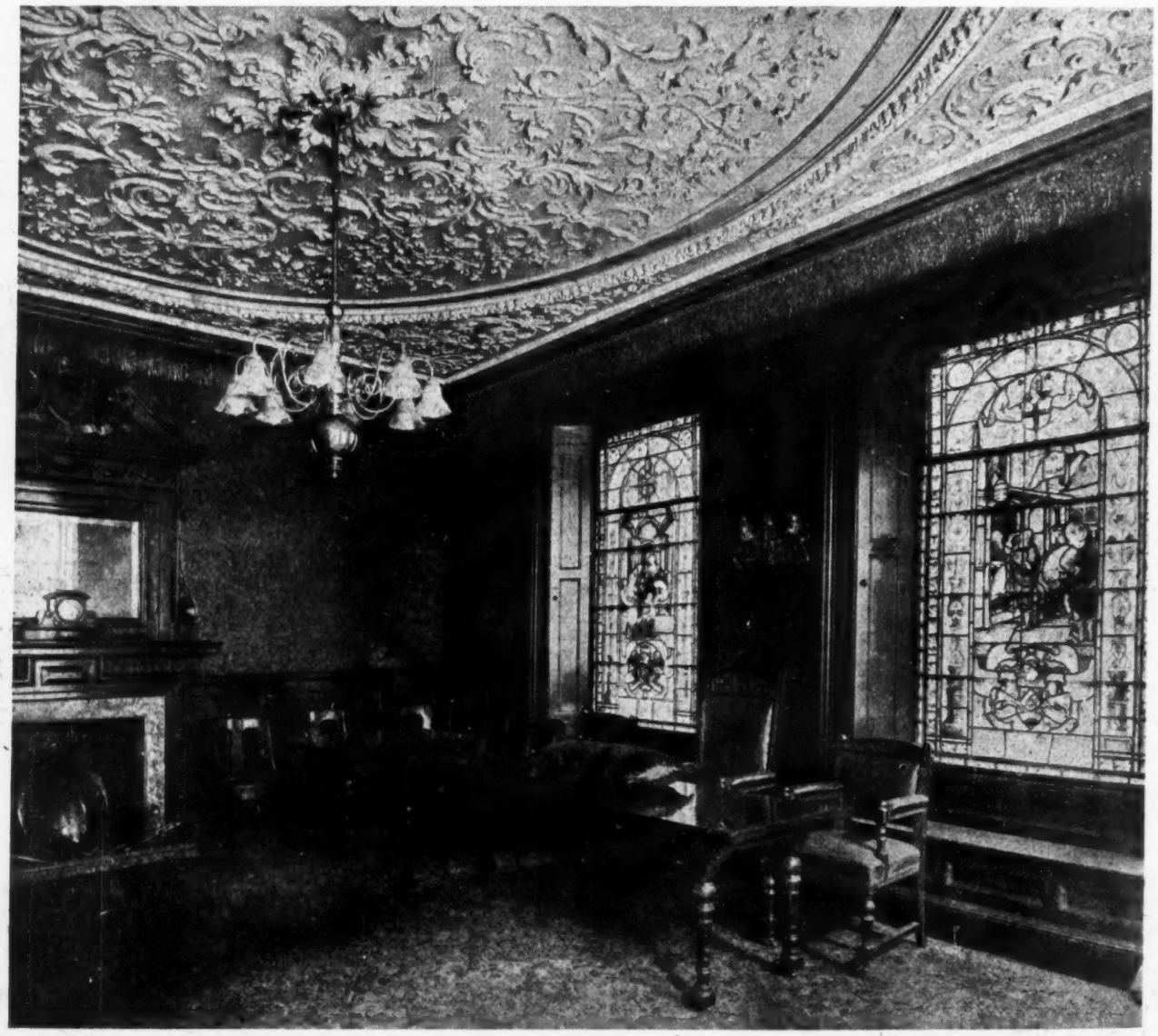
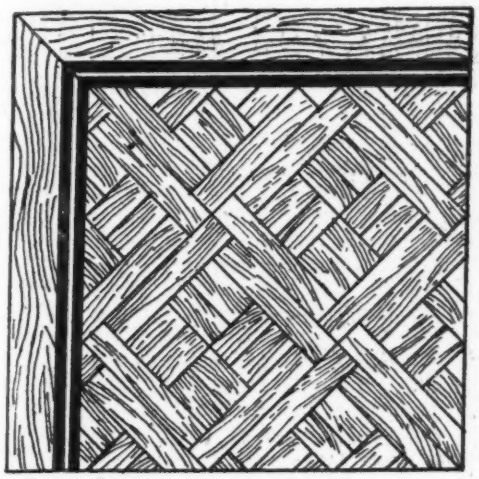


Photo: Messrs. Bedford Lemere.

Innholders' Hall: The New Court Room



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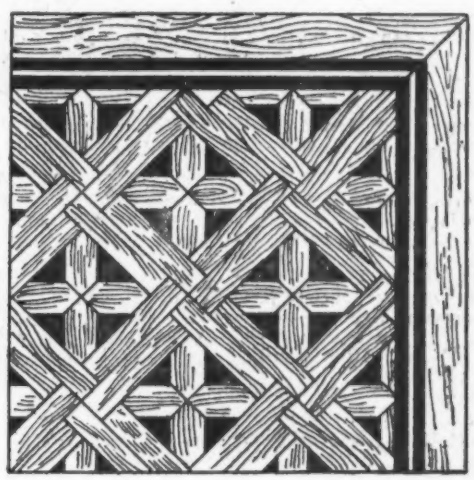

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THE BUILDING TRADE.

FUEL ECONOMY IN COOKING APPARATUS.*

LECTURE I. (continued).

Introductory.

It should be possible to specify the efficiency of an appliance in an abstract sense apart altogether from the use made of it, and in such a way that the quoted figure shall give a reasonably practical idea of the economy of the apparatus for the purposes for which it is designed; especially is this the case as ovens naturally vary in size. In order to get over all these difficulties so far as may be I suggest that the following convention might serve:—

Every oven should be specified as to its size according to the weight of a joint of meat which is supposed to be its maximum capacity. Thus, a 7 lb. oven might be reasonably taken to be of dimensions perhaps 18 in. by 15 in. deep by 16 in. high, which would be capable of containing a dish with a joint of beef 7 lb. in weight, together with a second dish of extras. I give all these figures merely to fix ideas and with all reserve subject to correction at the hands of persons more competent than myself to pronounce on such practical points. I am not lecturing on cookery but on fuel economy. Similarly, one might have ovens of other standard sizes.

Every oven should be tested under conditions appropriate to its nominal size and its results should be compared only with those derived from other appliances of the same nominal size.

The question resolves itself, therefore, into the standardisation of figures so far as such is possible. There should be a recognised standard, and any odd or intermediate sizes should be recognised as odd sizes which are procurable perhaps only on special order, and their use should be discouraged so far as possible by making them more expensive in every way.

The total or absolute efficiency of an oven would then be the ratio between the amount of heat physically necessary to cook a joint, or its equivalent, and the total heat applied to the oven necessary to effect that purpose. This would take account of all losses of every kind. It should be also specified what standard cooking process is assumed in determining this total efficiency, which process should be laid down by experts to correspond with the most economical, from all points of view.

Let us now consider what is strictly necessary in order to do the required work. In the first place consider that the food is received in a cold condition. In order to fix our ideas, let us imagine an uncooked joint of beef weighing, suppose, 7 lb., but the same principle will apply to other food with differences only in detail. The surface of this joint has first to be subjected to a temperature of, say, 450 degrees to 500 degrees F., this temperature being maintained for perhaps a quarter of an hour. I need not explain that the object of this is to coagulate the albumen on the exterior surface of the joint in order to cover it with a crust so as to retain the juice in the interior of the meat and not allow it to be wasted. Subsequently, the temperature is reduced so that the whole surface of this meat is exposed to a temperature of, say, 350 degrees. The oven must be maintained at this point for several hours, in order that the temperature of the interior of the meat may be gradually raised without making the exterior parts too hot. The cooking operations, which consist in the coagulation of the albumen and other chemical changes which need not be discussed, is complete when every particle of albumen has been raised to the required temperature and coagulated. We are not at present primarily concerned with the details of the process, but only with the heat treatment required to carry it out. That treatment for a 7 lb. joint requires the interior of the oven to be maintained at, say, 450 degrees for a quarter of an hour, and afterwards at 350 degrees for 1½ hours. A different weight would require a different process.

Now there is a certain minimum amount of heat absolutely necessary to cook the meat at this temperature. It is impossible to ascertain from any published figures with which I am acquainted what is the amount of heat actually absorbed by different foods during the process of cooking. This physical aspect of the matter does not seem to have been considered by cookery experts or dietists. It would appear that heat must be absorbed in all the following ways:—

(1) Raising the substance of the food to a temperature the value of which does not seem to be known, though it is probably below 212 degs. F. in the interior layers of meat.
(2) Evaporating some of the moisture in the food.
(3) Distilling off some of the essential oils.
(4) Producing chemical changes.
(5) Melting the fats—and probably in other ways.

It will be necessary to disregard this difficulty for the time, and assume that the equivalent of all these quantities jointly will be represented by raising the whole meat to a higher temperature than it actually has. Taking the specific heat of the beef to be similar to that of water, it may be estimated that the total amount of heat necessary to effect the cooking of a 7lb. joint does not exceed, say, at the outside, 7 × 300, or perhaps 2,100 B.T.U. This, of course, is only an assumption. If it is incorrect it will make a difference in the absolute, but not in the relative, values of the calculated efficiencies of our ovens. In cases where the temperature of the food has to be maintained for a period after it has been attained, once the required temperature has been attained no more heat is absorbed by the food. But in other cases there may be a gradual absorption of heat by the food as its temperature rises, or due to the continuous evaporation of moisture or other causes. Theoretically it costs nothing to maintain the temperature once it is attained. If only we could prevent the escape of heat from the food entirely, it would maintain that temperature permanently. Any cooking process which required only a prolonged period of elevation of temperature would thus continue by itself without any further supply of heat. If we could take from the fuel a quantity of its energy and transfer it to the meat without loss we could cook a 7 lb. joint by the expenditure of, say, 3 oz. of fuel, or say 5 cubic ft. of gas, or about ¾ unit of electrical energy. The trouble is we cannot, owing to practical conditions effect the transfer of the heat without the waste of a large proportion of the heat we have to employ, because we do not yet know how to handle heat economically. Thus, if in order to do this work it were found necessary to expend 14,000 heat units on the oven, the "efficiency" would be $\frac{2,100}{14,000} \times 100 = 15$ per cent.

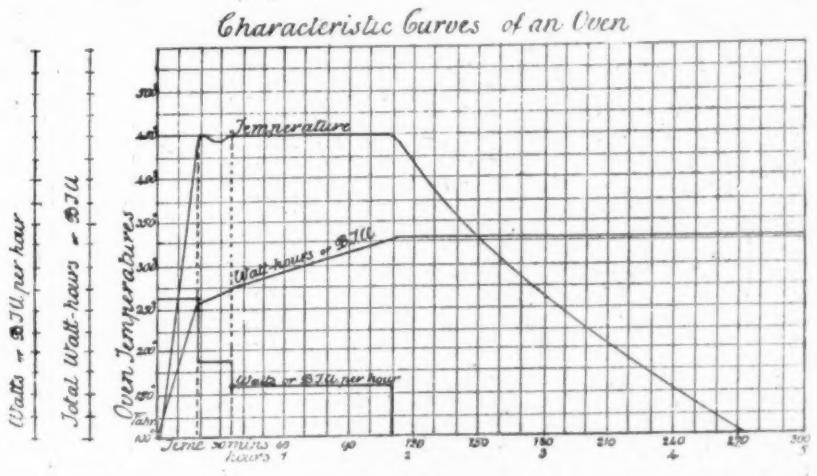
A more accurate definition of oven efficiency will be explained later.

Running Efficiency.

A further definition should be recognised as "running efficiency," which should represent the amount of heat necessary for continuous operation of the oven at some standard temperature, which I suggest provisionally might be fixed at 350 degs. F.; the latter figure would not in any scientific sense be properly called "efficiency"; it would merely represent the amount of energy which would be lost per hour from the oven from all causes when maintained at the given temperature. It might be found possible to reduce this loss to a rate per cubic foot of interior space or per square foot of external surface. But all such reductions are scientifically unsound.

Characteristic Curves.

In order to complete the specification of the qualities of the oven from the point of view of heat lost it would be necessary to have what may be called the 'characteristic curve" of the appliance, which should be obtained in the following way: Every apparatus for heating should be worked at full power, which should be so calculated that the standard temperature is attained therein in a specified standard time. The power should then be controlled until that temperature has been maintained for, say, two hours, after which the power should be entirely shut off and the appliances be allowed to cool. Throughout this process temperature observations should be taken from the interior of the oven every five minutes throughout the entire period, and the results plotted on a time base. On the same diagram should be plotted the total heat supply in B.T.U. and the time-differential of the same quantity which would represent the rate of heat supply per hour. All these curves could be very clearly marked on the same diagram, which would have the appearance of the figure given herewith and which would form a very complete guide not only to the heat capacity of the apparatus but of the heat-losing and the heat-retaining properties of the entire structure, which would indeed be a complete guide to the cooking powers of the appliance. During this test naturally the oven should be loaded to its normal or standard capacity. A further series of tests might with great advantage be made to determine the expenditure of heat power necessary to maintain a series of standard temperatures, which I



* Third instalment of the first of a course of lectures delivered at the University College, Gower-street, by Mr. A. H. Barker, B.A., B.Sc., on January 23, and subsequently. The first part of the lecture was given in our issue for March 15.

suggest should be 200, 250, 300, 350, 400 and 450 deg. These would probably follow some well recognised law, so that all these curves could be produced from one point on each. (See Fig. 3).

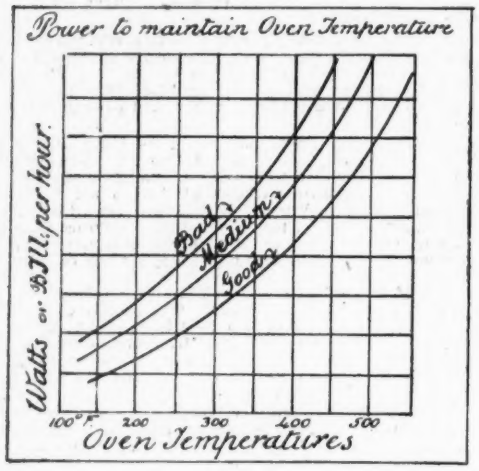


FIG. 3.

Experimental Details.

Let us now consider the experimental means for determining the scientific efficiency of an oven. In order to do this we must assume conditions which are as practical as possible and at the same time such that in a scientific sense the term "efficiency" can reasonably be applied to the result. All true science is merely glorified common sense. To be what is grandiloquently called scientific in such a practical matter as this simply means to be accurate—to make your experiments so that you can get the same result 10 times running if you want to. If you cannot do this your results are practically worthless. In order to be able to do it you must be scientific. We must lay down a standard method of using the oven while the test is being made, for it is probable, or indeed certain, that the efficiency will alter according to the process used. In order to be really practical we must determine what is generally the best way of using the oven for the purpose of cooking, let us say, a joint of meat, and lay down an exact process to correspond so far as may be with that method. We are limited by the nature of the process to a certain maximum temperature, otherwise we shall burn the meat. It must not be too low in the early stage or we shall spoil it. What is recognised as the best method of cooking a joint of meat may be stated to be somewhat as follows, and we must determine our figures while the oven is used exactly at this temperature.

Starting from cold, the oven is first raised to a predetermined temperature, which may be placed at perhaps 480 deg. F. When the oven has attained this temperature, the meat on a suitable vessel is placed in the oven and the door is closed; this condition is maintained for perhaps 15 minutes, the object being to seal up the outside of the joint by covering it with a hard, impervious skin so as to retain the juices of the meat within the joint itself. (If the meat were placed in a cold oven which was gradually raised in temperature the effect would be that all these juices would be lost to the beef and would drain into the containing vessel.) After this preliminary period the oven temperature is reduced to perhaps 350 deg., at which it is maintained for, say, two hours, when the operation is complete.

In this country one of the chief sources of waste of fuel and food is that we habitually cook at too high a temperature. The temperatures named above are possibly much too high. I am not considering such questions at the moment. We will leave the question of temperature in abeyance for the moment.

(*To be continued.*)

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	11	11	11	11	11	10½	10	8	8	8
Accrington	11½	11½	11	9½	9	10	9½	7	7	7
Altrincham	1/2	1/2	1/3	1/2	1/-	1/1	1/-	10	11	10
Ashton-under-Lyne	1/1	1/2	1/1½	1/1	1/1	1/2	1/-	9½	10	10
Barnsley	1/0½	11½	11½	1/-	1/-	1/-	9½	9½	9½	9½
Barrow-in-Furness	1/2	1/2	1/2	1/2	1/2	1/2	1/1½	1/-	1/-	1/-
Barry	1/-	1/-	1/-	1/-	—	1/-	11	9	9	9
Bath	11½	11½	11½	11	11	11½	10½	9	9	9
Bedford	11	11	11	11	11	11	9	9	9	9½
Birkenhead	1/2	1/2	1/2	1/1	1/1	1/3	1/2	10½	10½	10½
Birmingham	1/1½§	1/1½§	1/1½§	1/1½§	1/1½§	1/1½§	1/0§	10½§	10½§	10½§
Bishop Auckland	11	11	11	11	1/2	11	10	8	8	8½
Blackburn	1/1	1/1½	1/1½	11	1/0½	1/1½	1/-	8½	9	9
Blackpool	1/-	11	1/2	9½	8½	9½	10½	6	6	6
Bolton	1/1	1/2	1/2	11½	1/0½	1/2	1/0	7½	7½	10
Bournemouth	11	11	11	11	11	11	10½	8½	8½	8½
Bradford	1/2½	1/2½	1/2	1/1½	1/1½	1/3	1/1	1/-	1/-	1/-
Bridgwater	8½	8½	8½	8½	8½	8	7½	6	6	6
Brighton	1/-	1/-	1/-	1/-	1/-	1/-	10½	9½	9½	9½
Bristol	1/2½	1/2½	1/2½	1/2½	—	1/2½	1/1½	11½	11½	11½
Burnley	1/0½	1/0½	1/0½	1/-	1/-	1/2	1/-	7	7½	7½
Burton-on-Trent	11	11	11	11	11	11	10½	8½	8½	8½
Bury	1/2	1/2	1/2	1/1	1/1	1/2	11½	10	10½	10½
Cambridge	11	10½	10½	10½	10½	11	9	7½	7½	7½
Cardiff	1/1½	1/1½	1/1½	1/1½	1/1½	1/2½	1/0½	10½	10½	10½
Chatham	10	10	10	10	10	10	8½	7	7	7
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	9½	9½	9½	9½	—	9½	9½	6½*	6½*	6½
Chester	11½	1/-	1/-	1/-	1/-	1/-	11	7½	8½	8½
Chesterfield	1/-	1/-	11	11	10	11	10½	8-8½	8-8½	8-8½
Colchester	9	9½	9½	10	9	10	7	6½	6½	6½
Coventry	1/2	1/2	1/2	1/2	1/2	1/2	1/1	11½	11½	1/-
Crewe	9	9½	10	10½	10	9½	10	7	7	7½
Darlington	1/1	1/1	1/1	1/1	1/2	1/-	1/-	10	10	10
Derby	1/-	1/-	1/-	1/-	1/-	11½	11½	9	9	9½
Doncaster	10½	1/-	1/-	10½	10½	10	9½	9½	9½	9½
Dudley	9½	1/-	1/-	10	10	9½	8½	9	9	9½
Durham	10½	10½	10½	10½	10½	9½	9	7½	7½	7½
East Glam. and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	10	10	10	10	10	10	9	8	8	8
Folkestone	8½	9	9	9½	8½	9	8	7	7	7
Gloucester	10½	11	11	10½	10½	11	10	8½	8½	8½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	11½	1/-	1/-	1/-	1/-	1/-	10	10	10	10
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Halifax	1/1½	1/1½	1/1½	1/1½	1/1½	1/2	11	10½	10½	10½
Harrogate	10½	9½	11	9	8	1/-	9½	7½	7½	7½
Hartlepools	1/2	1/2	1/2	1/2	1/2	10½	1/-	11	11	11
Hastings	10	10	10	10	10	10	8½	7	7	7½
Hereford	10	10	10	10	10	10	9	7½	7½	7½
Huddersfield	1/2½	1/2½	1/3	1/-	1/-	1/-	11	11½	11½	11½
Hull	1/3	1/3	1/3	1/3	1/3	1/3	1/1½	1/1	1/1	1/1
Ipswich	1/-	1/-	1/-	1/0½	1/-	1/0½	10½	9½	9½	9½
Lancaster	1/-	1/-	1/-	1/-	1/-	1/-	1/-	9	9	9
Leamington Spa	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Leeds	1/2½	1/2½	1/2	1/2	1/2	1/3	11½	11½	11½	1/-
Leicester	1/1	1/1	1/1	1/1	1/1½	1/1	11½	10½	10	11
Lincoln	10½	1/-	10½	10½	10½	10½	10	9½	9½	9½
Liverpool	1/2	1/2	1/2	1/2	1/1½	1/3	1/0½	10½	10½	10½
Llanelly	1/1	1/1	1/1	1/1	1/1	1/3	11½	10½	10½	10½
London	1/3½	1/3½	1/3½	1/3½	—	1/3½	1/0½	11½	11½	11½
Loughborough	10	10	10½	10	10	10	9	8½	8½	9½
Luton	10½	10½	10½	11½	10½	11	9½	8	8½	9
Maidstone	10	10	10	10	10	10	9	7	7	7
Manchester	1/3	1/3	1/3	1/3	1/2	1/4	1/3	11	11½	11½
Mansfield	11	11	10½	11	11	10½	11	8	8	8
Merthyr Tydfil	11	11	11	11	11	11	10	8½	8½	8½
Middlesbrough	1/2	1/2	1/2	1/2	1/2	1/2	1/-	11	11	11
Newcastle-on-Tyne	1/2	1/2	1/2	1/2	1/2	1/1	1/1	11	11	11
Newport, Mon.	11½	11½	11½	11½	11½	1/2	10½	8½	8½	8½
Northampton	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Norwich	10½	10½	10½	10½	10½	10½	9½	8	8	8
Nottingham	1/2½	1/2½	1/2½	1/2½	1/2½	1/3	1/1½	1/0½	1/0½	11
Oldham	1/1	1/-	1/2	1/2	11	1/2	1/-	10½	10½	8
Oxford	11	10½	10½	10½	10½	10½	9½	8	8	8½
Plymouth	1/2*	1/2*	1/2*	1/2*	1/2*	1/2*	8½*	8½	8½	8
Pontypridd	11	11	11	11	11	11	10	8	8	9½
Portsmouth	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½	8½
Preston	1/-	1/0½	11½	1/-	1/-	1/-	11½	8½	9	7½*
Reading	10½	10½	10½	11	10½	10½	9	7½*	7½*	10
Rochdale	1/1	1/1	1/2	1/1	1/1	1/2	1/-	9½	9½	7
Rochester	10	10	10	10	10	10	8½	7	7	10
Rugby	1/-	1/-	1/-	1/0½	1/1	1/-	11	9	9	8½
St. Albans	10	10	10	10	10	10	9	8	8	8
St. Helen's	1/2	1/2	1/2	1/2	1/2	1/2	1/1	8	8	9
Scarborough	9½	9†	9	9½	9½	9½	8†	9	9	11½
Sheffield	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11½	11½	8½
Shrewsbury	8½	11‡	1/3	9½	—	8½	7	8½	8†	9½
Southampton	1/0½	1/0‡	1/0½	1/0½	1/0½	1/0‡	11½	9½	9½	8
Southend-on-Sea	10	10	10	10	P'cework	10	9	8	8	10
Southport	11½	11	11½	11	11	1/1	1/1	10	10	11
South Shields	1/2	1/2	1/2	1/2	1/2	1/1*	1/1	11	11	10
Stockport	1/2	1/1½	1/2½	1/-	1/1½	1/2	11½	10	10	11
Stockton-on-Tees	1/2	1/2	1/2	1/2	1/2	10½	1/-	11	11	8½
Stoke-on-Trent	11½	11½	11½	11½	—	10½	10½	8½	7½	7½
Stroud	9½	9½	9½	9½	9½	9½	9	7½	7½	11
Sunderland	1/2	1/2	1/2	1/2	1/2	1/1½	1/1	11	11	10
Swansea	1/1	1/1	1/1	1/1	1/1	1/2	1/0½	10	10	7½
Taunton	10	10	10	10	10	10	9	7½	7½	8
Torquay	10	10	10	10	10	10	10	8	8	9½
Wakefield	10	1/-	11½	1/-	1/-	1/1	10	9½	9½	11½
Walsall	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11½	11½	9½
Warrington	11½	1/0½	1/0½	1/1	1/1	1/0½	11½	8½	9	8
West Bromwich	11	11	10½	10½	—	10	9	8	8	10½
Wigan	1/1½	1/2	1/1½	1/1½	1/0½	1/1½	11½	10	10	9
Windsor	1/-	1/-	1/-	1/-	1/-	1/-	10½	9	9	9½
Wolverhampton	1/-§	1/-§	1/-§	1/-§	1/-§	1/-§	10½§	9§	9§	10½
Worcester	9½	1/-	1/-	1/-	1/-	1/-	10	10½	10½	9½
York	1/-	1/-	1/-	1/-	1/-	10½	9½	9½	9½	9½

The Masons' rate given is for bankers; fixers usually ½d. per hour extra.

* War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted.
‖ War bonus of 6s. per week granted. § 1½d. per hour extra for men engaged on munition work.

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised—Ed.]

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1,000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 10 0
Picked Stocks for Facings	3 5 0

Per 1000, Delivered at Railway Depot, London.

	£ s. d.		£ s. d.
Flettons	2 3 0	Best Blue Pressed Staffordshire	6 10 0
Best Fareham Red	4 0 0	Do. Bullnose	6 15 0
Best Red Pressed Ruabon Facing	6 0 0	Best Stourbridge Fire bricks	9 5 0

GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	14 17 6	D'ble Str'tch'rs	20 7 6
		D'ble Headers	17 7 6
		One Side and two Ends	21 7 6
Headers	14 7 6	Two Sides and one End	22 17 6
Quoins, Bullnose and 4½in. Flats	18 7 6	Splays and Squints	19 17 6

Glazed bricks priced at so much each, 25 per cent. advance on list.

Second Quality, £1 per 1,000 less than best.

	s. d.		
Thames Ballast	10 0	per yard,	delivered
Pit Sand	12 6		
Thames Sand	13 6	,, ,,	2 miles
Best Washed Sand	14 0	,, ,,	radius
¾ in. Shingle for Ferro-Concrete	12 0	,, ,,	Paddington.

Per ton, delivered.

	£ s. d.		£ s. d.
Best Portland Cement	2 15 0	..	2 18 0

Do. £2 11s. 0d. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 1 13 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 3d. each and credited at 2s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube	2 11½
White basebed, 2d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average.*	

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red Freestone	2 2
Beer in blocks	1 7½	Red & White Mansfield random block	2 9
Grinshill in blocks	2 4	Yellow Magnesian Limestone do. do	3 3
Darley Dale in blocks	2 5		

YORK STONE—*Robin Hood Quality.*

Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	3 11
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	3 0
6 in. rubbed two sides, ditto ..... ,,	3 4
3 in. sawn two sides slabs (random sizes) ,,	1 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	0 10
1½ in. to 2 in. ditto, ditto ..... ,,	0 8½

HARD YORK—

Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	3 6
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	2 8
6 in. rubbed two sides ditto ..... ,,	2 4
3 in. sawn two sides slabs (random sizes) ,,	1 3
2 in. self-faced random flags ..... ,,	0 5½

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	3 15 0
Ditto hand-made ditto	3 17 6
Ornamental ditto	4 0 0
Hip and valley tiles (per dozen)	0 9 0

SLATES.

		Per 1,000 of 1,200 f.o.r. London. £ s. d.
Best Blue Bangor Slates.	20 by 10	16 10 0
,,	16 by 8	8 10 0
First quality" ,,	20 by 10	16 0 0
,, ,,	16 by 8	8 2 6
Best Blue Portmadoc	20 by 10	16 10 0
,, ,,	16 by 8	8 10 0
First quality ,,	20 by 10	15 5 0
,, ,,	16 by 8	7 12 6

WOOD.

BEST BUILDING REDWOOD.
Imported sizes.
Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in. .....
3 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in. .....
Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn

WOOD (*Continued*).

BEST BUILDING REDWOOD.

Battens: 2 in., 2½ in., and 3 in. by 8 in.	
2 in., 2½ in., and 3 in. by 7 in.	
2 in., 2½ in., and 3 in. by 6 in.	
Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in. ...	
3 in. by 4 in., and 3 in. by 4½ in.	
Boards: 1 in., 1½ in., and 1½ in. by 6 in. and 7 in.	
¾ in.	
Seconds	
Sawn pitch pine logs (about 35 cu. ft. average	
Do. 6 in. to 10 in. ..	
Best Pitch Pine Deals	
Under 2 in. thick	

JOINERS' WOOD

White Sea First Quality Red: 4 in. by 11 in...	
3 in. by 11 in., and 2 in. by 11 in.	
4 in. by 9 in.	
3 in. by 9 in., and 2½ in. by 9 in.	
3 in. by 11 in. boards ..	
7 in. and 8 in. battens ..	
7 in. and 8 in. boards ...	
Archangel White Deals— Best 3 in. by 9 in. and 10 in. and 11 in.	
Seconds, do.	
U.S. Battens	
Prepared Floorings and Matchings. Seconds Swedish Red and equal—	
1¼ in. by 6½ in. planed and shot	
1¼ in. by 6½ in. planed and matched	
1 in. by 6½ in. planed and shot	
1 in. by 6½ in. planed and matched	
¾ in. by 6½ in. planed, matched, and beaded, or V jointed	
1 in. by 6½ in. do.	
Columbian or Oregon Pine, best quality	
Yellow Pine—First regular sizes	
Oddments	
Seconds, regular sizes ..	
Oddments	
Kauri Pine—Planks per ft. cube	

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn.

Dry Wainscot Oak, per ft. super, as inch	0 2 0	..	0 2 6		
¾ in. do. do.	0 1 6	..	0 2 0		
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch	0 2 6	..	0 3 0		
Cuba. Mahogany	0 2 6	..	0 3 6		
Dry Walnut, American, per ft. super, as inch	0 2 0	..	0 3 0		
French, "Italian," Walnut	0 3 0	..	0 5 0		
Teak, per load (Rangoon or Moulmein)	60 0 0	..	85 0 0		
Do. do. (Java)					
American Whitewood planks, per ft. cube	1 4 0	..	1 10 0		
Glue, per cwt.	6 0 0	..	6 15 0		

METALS.

JOISTS, GIRDERS, &c.

Rolled Steel Joists, ordinary sections, basis price .....
Plain Compound Girders, ordinary sections .....
Plain Compound Stanchions
Angles, Tees, and Channels, ordinary sections .....
Flitch Plates .....
Cast Iron Columns and Stanchions, plain ordinary patterns .....
Prices controlled by the Ministry of Munitions.

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	36½	40	41½	42½
Water	31½	37½	36½	40
Steam	26½	35	31½	37½
Galvanised Gas ..	13½	32½	17½	35
,, Water	5	30	8½	32½
,, Steam	1½ *on*	27	2½	30

L.C.C. SOIL PIPES— London Prices ex works.

	Pipes coated. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6 fts..	3 2	.. 2 4½	.. 2 10½
2½ in. ,, ..	3 8	.. 2 7½	.. 3 7
3 in. ,, ..	4 6	.. 2 10½	.. 4 3½
3½ in. ,, ..	5 0	.. 3 7	.. 5 0
4 in. ,, ..	5 6	.. 4 1	.. 5 9½

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6fts. plain	2 3½	.. 1 4	.. 1 9
2½ in. ,, ,, ..	2 5	.. 1 7	.. 2 2
3 in. ,, ,, ..	2 10½	.. 1 11	.. 2 10
3½ in. ,, ,, ..	3 5½	.. 2 3	.. 3 3
4 in. ,, ,, ..	3 9½	.. 2 9	.. 4 0

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 6s. 3d. .. 5 in., 7s. 9d .. 6 in., 9s. 2d.

Per ton in London.

IRON—	£ s. d.		£ s. d.
Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars good merchant quality	16 10 0	..	17 10 0
Staffordshire "Marked Bars"	17 10 0	..	18 0 0
Mild Steel Bars	19 0 0	..	19 10 0

METALS (*Continued*).

Per ton in London.

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, £19 basis price.			
Hoop Iron, basis price	20 10 0	..	21 0 0
,, Galvanised	33 0 0	..	—
(* And upwards, according to size and gauge.)			
Sheet Iron Black—			
Ordinary sizes to 20 g.	22 10 0	..	23 0 0
,, ,, 24 g.	23 10 0	..	24 0 0
,, ,, 26 g.	24 10 0	..	25 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	34 0 0	..	34 10 0
Ordinary sizes to 26 g.	36 0 0	..	36 10 0
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	35 10 0	..	—
,, ,, 22 g. and 24 g.	36 0 0	..	—
Ordinary sizes to 26 g.	39 0 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	33 0 0	..	—
Ordinary sizes, 22 g. and 24 g.	33 10 0	..	—
Ordinary sizes, 26 g.	32 10 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	29 0 0	..	30 0 0
(Under 3 in., usual trade extras.)			

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	38 10 0	..	—
Pipe in coils	39 0 0	..	—
Soil Pipe	42 0 0	..	—
Compo pipe	42 0 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra. Orders for over 1 cwt. Sheet Lead or Pipe, or 28 lbs. Solder should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N.2 (E)], Hotel Victoria, S.W. Smaller quantities than the above can be obtained by making a written declaration to the Manufacturer or Merchant that the metal is wanted for urgent renewals or repairs, and giving the name of the job for which it is required.

COPPER—					
Strong Sheet	per lb.	0 2 2	..	—	
Thin ,, ...	,,	0 2 3	..	—	
Copper nails	,,	0 2 2	..	—	
Copper wire	,,	0 2 3	..	—	
TIN—English Ingots	,,	0 3 3	..	—	
SOLDER—Plumbers'	,,	0 1 5	..	—	
Tinmen's	,,	0 1 10	..	—	
Blowpipe	,,	0 2 0	..	—	

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft		Per Ft.
15 oz. fourths	7d	32 oz. fourths	9d.
,, thirds	7½d.	,, thirds	10d.
21 ,, fourths	7½d	Fluted, Obscured and	
,, thirds	8d.	Enamelled Sheet,	
26 ,, fourths	8d.	15 oz.	7½d.
,, thirds	9d.	21 ,,	8½d.

Extra price according to size and substance for squares cut from stock, and only small quantities can be supplied without an A Certificate.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES. Per Ft.

¼ Rolled plate	4½d.
⅜ Rough rolled and rough cast plate	5½d.
½ Rough rolled and rough cast plate	5½d
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	5d.
White Rolled Cathedral	5d.
Tinted do.	5½d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil	in pipes ..... per gallon	0 5 6
,, ,, ,,	in barrels .... ,,	0 5 7
,, ,, ,,	in drums .... ,,	0 5 10
Boiled ,, ,,	in barrels .... ,,	0 5 10
,, ,, ,,	in drums .... ,,	0 6 1

Orders for these oils must be accompanied by a certificate from the Ministry of Food (Oil and Fat Department), St. Stephen's House, Westminster, S.W.1.

Turpentine in barrels	,,	0 10 6
,, in drums	,,	0 10 9
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		53 10 0
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots.. per ton delivered		71 10 0
Red Lead, Dry (packages extra) .. per ton		42 0 0

Orders for White and Red Lead and any Paint containing Lead must be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty	per cwt.	0 16 0
Filocol	per cwt.	0 13 6

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak	0 12 0
Pale Copal Oak	0 14 0
Superfine Pale Elastic Oak	0 16 0
Fine Extra Hard Church Oak	0 14 0
Superfine Hard-drying Oak, for seats of Churches	0 16 0
Fine Elastic Carriage	0 16 0
Superfine Pale Elastic Carriage	0 18 0
Fine Pale Maple	0 14 0
Finest Pale Durable Copal	1 0 6
Extra Pale French Oil	1 4 0
Eggshell Flatting	1 0 0
White Pale Enamel	1 6 0
Extra Pale Paper	0 14 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	1 10 0
French and Brush Polish	0 16 0

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*

BRIGHOUSE.—The T.C. has accepted the following tenders for the supply of materials for the year ending March 31, 1919 :—
Sand—Messrs. W. Naylor & Sons, Ltd.
Flags, kerbs and setts—Mr. Herbert Brook.
Refined Tar—Messrs. W. & J. Glossop, Hipperholme.
Cast-iron goods—Messrs. J. Needhams, Stockport.
Fireclay goods—Messrs. W. T. Knowles, Ltd., Elland.

HAMPTON.—For repairs, &c., to Sheffield Tower, Hampton Works, for the Metropolitan Water Board :—
*R. H. Bacon.....£58 10 0

LONDON.—For tar spraying macadam roads, for the Westminster City Council :—
‡Johnson Brothers, 3d. per super. yard. Subject to ability to obtain materials and labour, and to any alteration made by the Government in the price of tar.
‡Smith, H. V., & Co., Ltd., 2½d. per super. yard, including provision and spreading of grit, 1½d. per super. yard, grit being provided and delivered by Council. Subject to ability to obtain materials and labour.
‡Taroads Syndicate, Ltd., 3d. per yard super. Subject to ability to obtain transport, labour and materials, and to Government permission and restrictions.

PATENTS.

APPLICATIONS PUBLISHED.*

110,913.—John Howard Way : Adjustable hinges.
113,058.—Joseph Kay : Window lock.
113,063.—Holophane Ltd. (Holophane Glass Co.) : Prismatic glassware for illuminating purposes.
113,081.—Siemens Schuckertwerke Ges. : Winding or hoisting machinery.
113,104. — George Portsmore Messenger : Casement windows.
113,107.—Anthony Mackey : Machine for crosscutting and dovetailing or corner-locking the sides and ends of boxes or similar articles.
113,112.—Henry Fairbrother (David William Allman) : Gas water-heaters.
113,143.—James Fluker : Fire extinguishers.
113,146.—Joseph Waring : Castors for furniture.
113,166.—George Allen Tutton : Boxes.
113,170.—Fred Hebden and Thomas Holding : Domestic fire-places.
113,187.—Seth Hamlin Gage and Frederick Harriman Rowe : Hinge locks.
113,194.—John Lewis Major and Percy John Pybus : Composite electric insulating substances.
113,206.—John Pye : Fitting for the back of a fire-place in kitchen stoves.
113,223.—Edward Colston Snow : Hinges, hasps, or staples.
113,227.—Walter John Gregory : Glazing roofs, greenhouses, &c.
113,234.—Joseph Lilly : Controlling springs for doors.
113,250.—Peshoton Sorabji Goolbai Dubash : Closets.
113,298.—Edward Lloyd Pease : Heat-interchanging apparatus suitable for heating air for use in buildings.
113,307.—William Roper : Device for operating window sashes.
113,344.—Allan Alistair Grant : Electric controlling of the locks of lockers in factories, munition works, and such-like places.
113,352.—Henry Donald Hope : Glazing bars.
113,366.—Matthew Brown Wild : Winches.
113,375.—William John Stewart and John Woolcock : Construction of ferro-concrete piles.
113,376.—Guy Liddell : Portable buildings.
113,385.—Andrew Wallace Cowan and Frederick Briggs : Roof glazing.
113,396.—Charles James Watts : Gas-heated radiator or stove.
113,410.—George Thomas Richardson : Apparatus for opening and closing fanlights, casements, &c.
113,420.—Robert John McKay : Stay bolts.

* All these Applications are now in the stage in which opposition to the grant of Patents upon them may be made.

NEW COMPANIES.

The particulars quoted below have been compiled by Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C. 2, from the documents available at the Companies Registry.

HELMSLEY TIMBER CO., LTD. (149,800), Registered March 7. To carry on the business of English and foreign timber merchants, &c. Nominal capital, £5 000 in £1 shares. The directors shall be appointed by the subscribers.

BAND SAW MANUFACTURING CO., LTD. (149,796.) Registered March 7. To carry on the business of band saw manufacturers, &c. Nominal capital £1,000 in £1 shares.

LUCAS BROS., LTD. (149,801.) Registered March 7. To carry on the business of manufacturers of and dealers in every description of fireclay goods, cement, lime and all sorts of builders' requirements, &c. Nominal capital £4,000 in £1 Ordinary shares.

AUSTRIAN and RIGA.
FIRST-CLASS, MILD GRAINED, DRY
WAINSCOT OAK.
J. GLIKSTEN & SON, Ltd.,
Carpenter's Road, Stratford, E.
Telegrams: "Gliksten, Strat, London." Telephone No.: Eastern 2771 (5 lines).

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Premiums - - £3,269,730
Reserve Funds - £4,010,993

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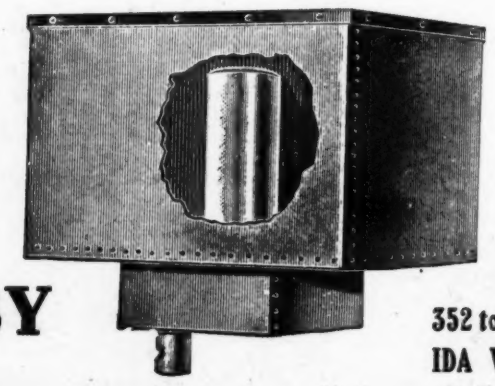
SLATE MERCHANTS, LTD
EXPERTS IN
SLATING, TILING.
STRIPPING AND RELAYING.
Telephone: Avenue 4940 (two lines), or write
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. G. F. Glenn), Office, Moorgate Station Chambers, Moorfields, E.C. 2—The best and cheapest materials for dampcourses, railway arches, warehouse floors, flat roofs, stables, cowsheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co.

JOINERY,
Of every description and in any kind of Wood.
CHAS. E. ORFEUR, LTD.,
ESTIMATES ON APPLICATION.
COLNE BANK WORKS, COLCHESTER.
Telephone: 0198. Telegrams: "Orfeur, Colchester."

BRABY'S Automatic Flushing Tanks.
SIMPLE.

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IDA WORKS, DEPTFORD, S.E.8
} LONDON.

TRINITY HALL ABERDEEN

MAHOGANY CHAIR TRINITY HALL ABERDEEN 1661
Andro Watsone flesher

TWO OLD ABERDEEN CHAIRS.

Photo: Messrs. Bedford Lemere.

INNHOLDERS' HALL: EXTERIOR VIEW.

TWO OLD ABERDEEN CHAIRS.
André Watsone flesher
ABERDEEN 1681

Photo: Messrs. Bedford Lemere.

INNHOLDERS' HALL: THE LIVERY HALL.

Photo: Messrs. Beaford Lemere.

INNHOLDERS' HALL: THE OLD COURT ROOM.

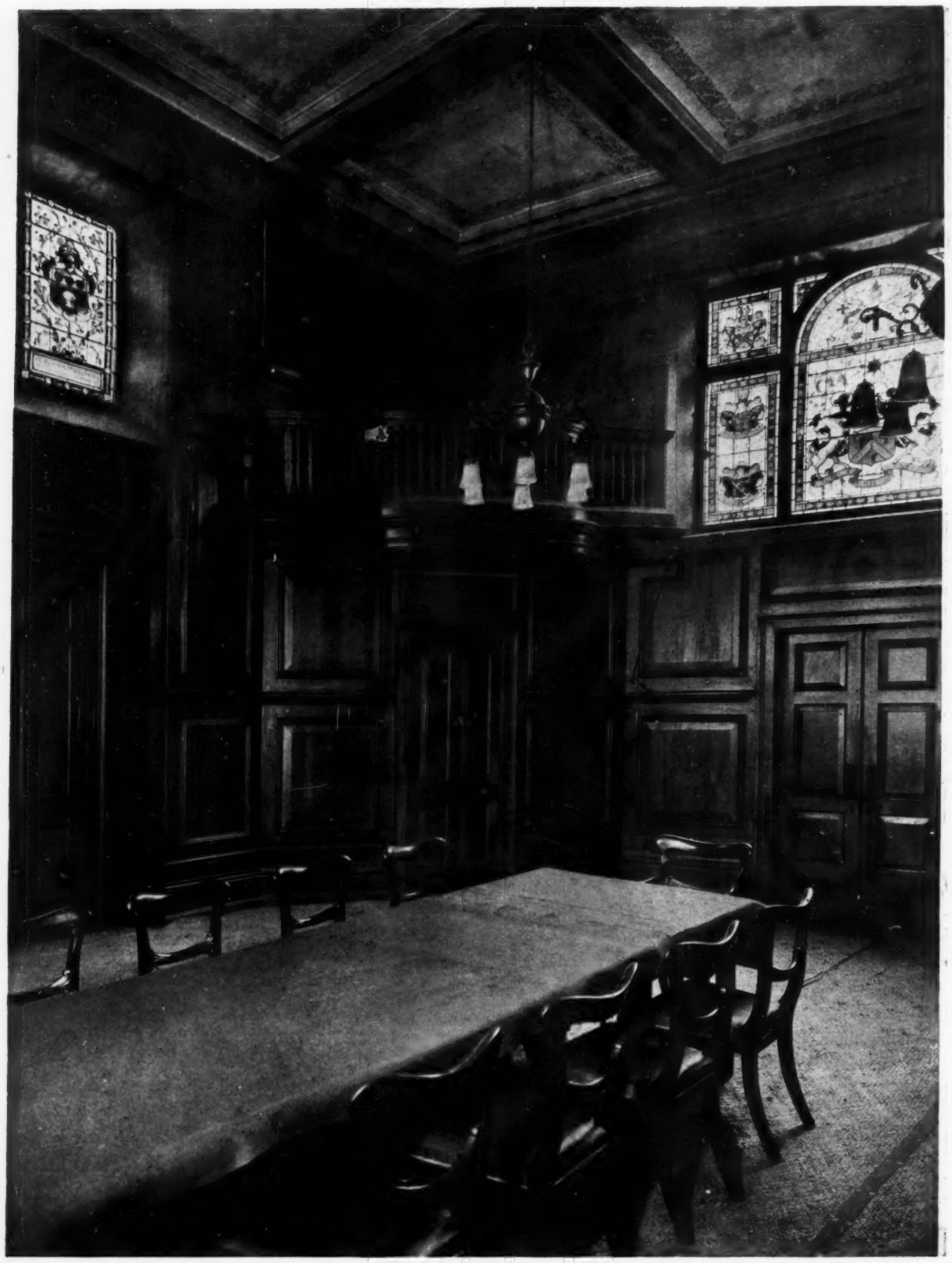
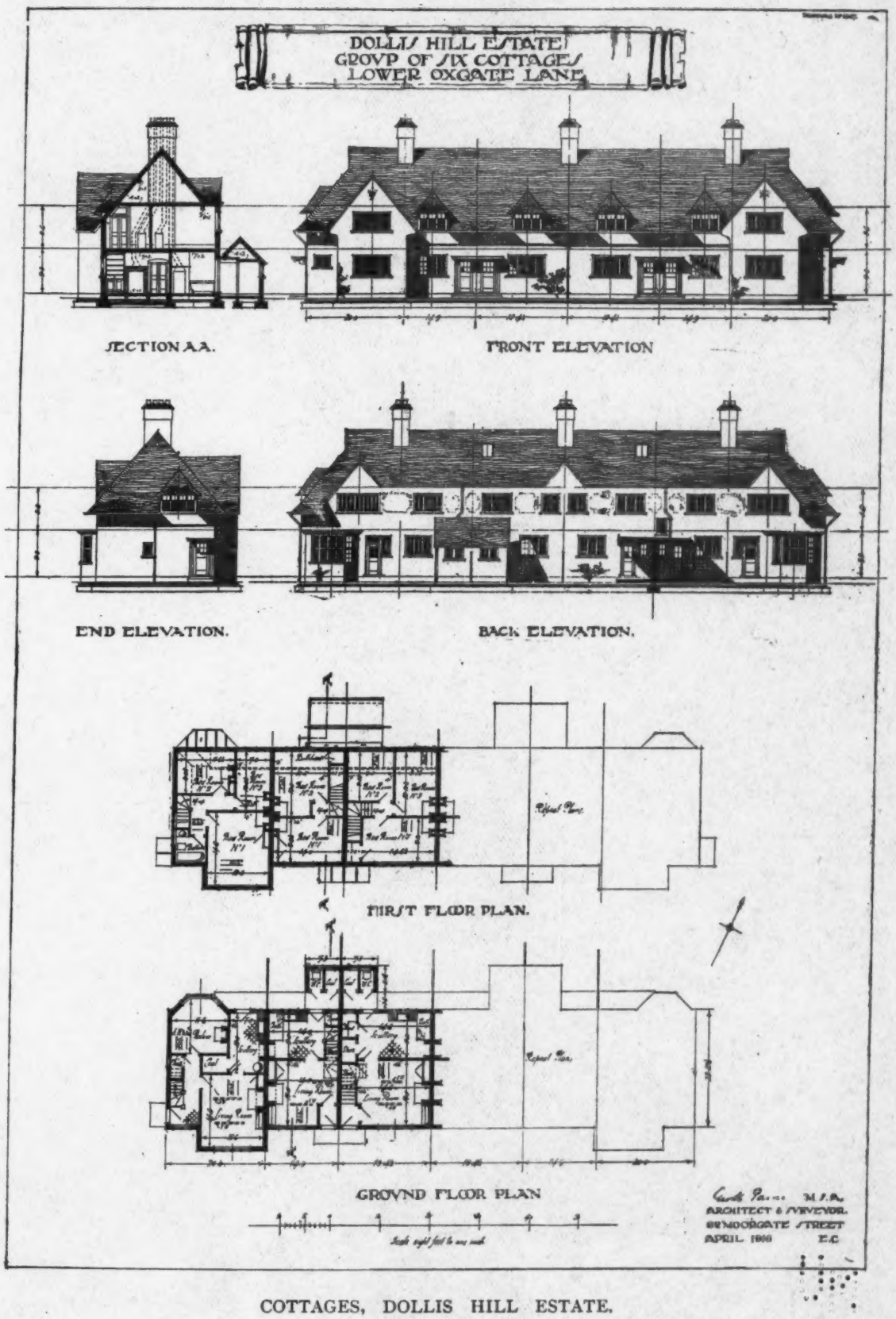


Photo: Messrs. Bedford Lemere.

INNHOLDERS' HALL: THE LIVERY HALL LOOKING TOWARDS GALLERY.



COTTAGES, DOLLIS HILL ESTATE.

MR. G. H. PAINE, ARCHITECT.